MASSACHUSETTS CONTINGENCY PLAN
IMMEDIATE RESPONSE ACTION
STATUS REPORT

SL-1 YOTT

Former Creese & Cook Tannery
25 Clinton Avenue
Danvers, Massachusetts
RTN #3-0303 & 3-12711

Prepared for:

Orchard Farm Trust
39 Cross Street
Peabody, MA

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1. INTRODUCTION

Woodard & Curran Inc. (W&C) is submitting this Immediate Response Action (IRA) Status Report on behalf of Orchard Farm Trust for the former Creese & Cook Tannery Beamhouse Disposal Site (the "Site") at 25 Clinton Avenue in Danvers, MA. This report was developed in accordance with the IRA Status Report requirements of the Massachusetts Contingency Plan (MCP) set forth at 310 CMR 40.0425, and as follow up to the IRA Plan dated November 15, 2006. This report serves as a report on the status of response actions conducted since the submittal and approval of the IRA Plan in November of this year and also as a modified plan for further response actions to address IRA conditions at the Site.

The Disposal Site Description and History, Summary of Previous Response Actions, and Identified IRA Conditions are discussed in Section 2. Section 3 provides an update of recent response actions conducted under the IRA and new site data. Section 4 provides a plan and schedule for additional response actions and Imminent Hazard Evaluation under the IRA.

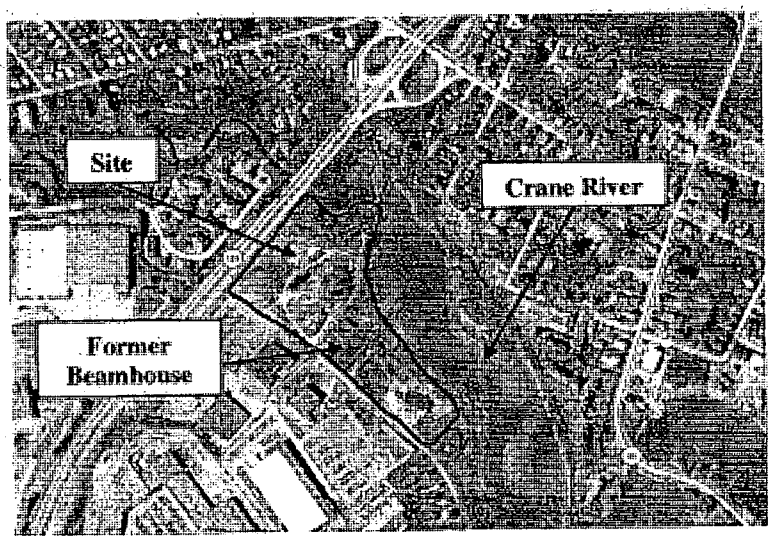
A copy of the IRA Transmittal Form (BWC-105) is included in Appendix A.

2. PROJECT DESCRIPTION

2.1 DISPOSAL SITE DESCRIPTION AND HISTORY

The former Creese & Cook leather tannery operated on portions of both sides of the Crane River from approximately the 1930's to 1984. Tanning and finishing activities were performed on the opposite side of the River in the area known as Danversport. The beamhouse operations, where skins were initially treated, dehaired, and bated prior to chroming and finishing, occurred at the Site. The air photo below shows the Site location, and a Site Locus Map is provided as Figure 1.

Inset 1: Air Photo, Former Creese & Cook Tannery Beamhouse Location



Initial treating and dehairing operations for tanning typically involve soaking the skins to treat them for infestation and to prepare the skins for the mechanical removal of hair. Soaking was typically done with either organic acid solutions or arsenic solutions. These solutions frequently also contained phthalates, which were added as a penetrant. Phthalates were also used in the finishing process in lacquers to aid in penetration into the chromed skins. Final dehairing typically involves scraping of the skins in the presence of a strong basic solution or oxidant solution. Bating is primarily a pH adjusting step to neutralize and soften the skins prior to chroming, and was accomplished in an adjusting bath. All of the solution baths would have accumulated solids and/or lost their strength after a period of time, and would have been discharged to on-site lagoons prior to replenishing the baths.

Dehairing and bating operations were conducted at the Site. Historical records indicate that lime pits were located within the footprint of the former Beamhouse. Discharge from dehairing and bating operations was directed to on-site lagoons located to the east of the Beamhouse, before decanting into the Crane River through a subsurface discharge pipe.

2.2 SUMMARY OF PREVIOUS RESPONSE ACTIONS

In the late 1980's, SP Engineering, working for the former tannery owners, investigated the Site and conducted remedial actions consisting of the removal of solid wastes for placement into a capped landfill on the western portion of the Site along the margin of the property bounded by State Route 128. In the

late 1990's, investigations by REW Environmental Consultants (REW) identified areas of arsenic-impacted soil near the former beamhouse and the former lagoons, and an area of miscellaneous solid waste fill at the northeastern portion of the Site but concluded that an Imminent Hazard did not exist in the former lagoon area. REW also conducted a Phase III evaluation, stating that upland remediation could be accomplished by removing most of the impacted soils for containment into the existing on-site landfill.

Geological Field Services, Inc. (GFS) submitted an IRA Status Report in February of 2005 and conducted additional sediment samples for the assessment of arsenic in salt marsh and mudflat sediments later that year. Sediment sample results were compared to known results from prior site sampling and a sediment dredging study conducted for the Town of Danvers in 2001. GFS also identified historical records indicating at least seven other tanneries and a former Manufactured Gas Plant (MGP) which discharged to this watershed. The sediment investigation results were provided directly to Mr. Chris Coolen of MassDEP Northeast Region in June 2005.

2.3 CONDITIONS WARRANTING IMMEDIATE RESPONSE ACTIONS

Arsenic concentrations in surface soils within 12 inches of ground surface have been identified above the Imminent Hazard threshold concentrations promulgated at 310 CMR 40.0321. Surface soil data indicate that Arsenic concentrations above the 40 mg/kg threshold exist at the following locations:

- Area "A" near the former Beamhouse;
- Area "B" at the northern end of the Site;
- Area "C" at the former lagoon;
- Within the Limits of the former Beamhouse; and
- Uplands between the historic cemetery and the adjacent retail parking areas.

These locations are shown on Figure 2. Additionally, MassDEP directed Orchard Farm Trust to conduct assessment for cyanide, dioxins, and chromium to support an updated Imminent Hazard Evaluation. Sampling for these parameters in site soils and Crane River sediments was conducted by Woodard & Curran on November 21 and 22, 2006 (see Section 3.1).

2.4 CURRENT SITE RECEPTORS

Current potential Human receptors at and immediately surrounding the Disposal Site include:

- Trespassers accessing the Site;
- Recreators using the Crane River for passive recreational purposes (canoeing, bird watching, etc.); and
- Workers engaged in Waste Site Cleanup activities.

3. IMMEDIATE RESPONSE ACTIONS SINCE LAST STATUS REPORT

3.1 STATUS OF ASSESSMENT AND RESPONSE ACTIONS

Woodard & Curran conducted soil and sediment sampling in accordance with the November 15, 2006 IRA Plan on November 21 and 22, 2006. An initial investigation of debris in the Beamhouse area determined that soil sampling in the Beamhouse area would not be possible using hand methods due to the volume of debris and the configuration of a remnant concrete and brick floor. David MacDonald, LSP-of-Record for the Site, contacted Mr. Chris Pyott at MassDEP and received approval to delay this portion of the sampling plan until a licensed asbestos inspector could assess the debris piles for asbestos containing materials (ACM) and draft a debris removal plan to prevent mechanical spreading of potential ACM in the debris.

W&C field engineers prepared to collect the remainder of the samples outlined in the IRA Plan. All soil samples were collected in the 0-12" bgs range with a stainless steel shovel. This shovel was decontaminated between each sample with an Alconox and water solution and scrubbed with a brush. Soils were placed into a stainless steel mixing bowl and mixed with a spoon for homogenization before being placed into sample jars. The bowl and spoon were decontaminated in the same manner as the shovel between each sample. Weather on both sampling days was mostly sunny with temperatures around 40 °F. All sample locations were recorded using a global positioning unit in the field.

Samples collected on November 21, 2006 included samples in the Upland Area, Area A, and Area B. All samples collected in these areas were field screened with an X-Ray Fluorescence (XRF) meter to analyze concentrations of arsenic and total chromium in the field. A random selection of these samples was also analyzed for total lead. Additionally, 30% of the samples screened with the XRF were also submitted for confirmatory laboratory analysis of the same parameters. Table 1 shows the IRA Plan's Analytical Testing Summary, and Table 2 lists the laboratory results and field screening results for samples analyzed by XRF. Results from this sampling event are also shown on Figure 3.

W&C began to collect sediment samples in the late afternoon on November 21 as the tide drew down. Five sediment samples were collected on this afternoon, and the remaining fifteen sediment samples were collected early in the morning of November 22 following the 5:32 a.m. low tide. Sediment sample collection methods were the same as soil collection methods except that sampling depth for sediment was 0-6" bgs. Sediment samples were also field screened with the XRF for arsenic, total chromium, and lead.

Soil samples from the former Lagoon area (Area C) were also collected on November 22, 2006. One duplicate sample was collected in this area (WC-101) as a duplicate of sample WC-23. One background sample (WC-44) was also collected for analysis of dioxins and arsenic at the southeastern corner of the Site, just beyond the end of the old railroad bridge that crosses the Crane River.

A licensed asbestos inspector, Ms. Patti Riley of Enviro-Safe Engineering, was on-site on November 22 to assess the nature of the building debris in the former Beamhouse. Ms. Riley collected samples of several types of suspect building debris found in the Beamhouse for analysis of asbestos. Various materials were identified as asbestos containing materials, including black mastic on concrete, and at least one piece of transite. The asbestos abatement work plan prepared by Enviro-Safe is included as Appendix B.

3.2 DATA QUALITY ASSESSMENT

The data reports provided by the laboratory were reviewed for quality assurance parameters. Biases, data qualifications, and how these were handled within the Imminent Hazard Evaluation are discussed in section 4 of this report. No data planned for use in the evaluation needed to be rejected based on lab quality assurance results.

The objectives of the sampling and testing were to collect surface soil and sediment representative of current site conditions for evaluation of potential Imminent Hazard conditions at the Site. The distribution, type, and concentrations of parameters detected were consistent with historical results, anticipated results based on site history, and/or the location of known source areas and operations at the Site. The results are therefore considered representative of site conditions, within the limitations of the sampling program. A more detailed Background assessment is warranted for future sampling activities. To conservatively account for the limitations in the current Background assessment, concentrations of Dioxins above those detected in the one reported Background sample (WC-44) were used in the IHE as conservatively representative of source area concentrations.

The data are considered of sufficient quality for the rendering of an LSP opinion relative to potential Imminent Hazard Conditions at the Site.

4. IMMINENT HAZARD EVALUATION

4.1 DATA REDUCTION AND IMMINENT HAZARD EVALUATION

As per MassDEP's notice of August 4, 2006, and as described in the IRA plan dated November 9, 2006 (prepared by Woodard & Curran), an Imminent Hazard Evaluation (IHE) for human health and the environment has been performed for the Site. This evaluation was requested by the MassDEP as a result of the historical detection of elevated concentrations of various constituents sediment associated with former tannery operations, including arsenic, lead, and chromium, within surface and subsurface soils across the Site and in sediment of the adjacent Crane river. Subsequent to MassDEP's request, Woodard & Curran collected additional surficial (0-1' bgs) soil and sediment chemical data, which included the analysis of arsenic, chromium (total and hexavalent), lead, cyanide (total and physiologically-available), and chlorinated dioxins and furans, as previously described in Section 3.1.

Although other constituents, such as volatile organic compounds (VOCs), have been detected on the Site property, the IHE focuses specifically upon potential exposures to only arsenic, lead, hexavalent chromium, and dioxins/furans, as concentrations of these constituents are prevalent within surface soils and, to a lesser extent, adjacent river sediments, and present the greatest toxicity relative to other constituents detected at the Site. For a more detailed description of historical Site operations and Site conditions, please refer to Section 2.1.

The IHE was completed in accordance with the performance standards for an IHE promulgated in the Massachusetts Contingency Plan (MCP; 310 CMR 40.0950), as well as with the MassDEP document "Guidance for Disposal Site Risk Characterization in Support of the Massachusetts Contingency Plan" (MassDEP, 1995). The structure of the human health IHE is similar to a site-specific Method 3 human health risk characterization under the MCP, with the exception that it addresses only current exposures over a short timeframe (5 years). The purpose of the human health IHE is to evaluate the potential short-term human health risks posed by the levels of constituents present in accessible media at the Site. The human health IHE is organized in the following manner:

- Hazard Identification (Section 2.0);
- Exposure Assessment (Section 3.0);
- Dose-Response Assessment (Section 4.0); and
- Risk Characterization (Section 5.0).

Additionally, we have conducted an IHE for the environment in accordance with the MCP.

4.2 HAZARD IDENTIFICATION

The objective of the hazard identification is to summarize the nature and extent of chemical constituents at the Site, and to select chemicals of potential concern (COPCs) for consideration in the evaluation of potential site health risks. A description of the collection and analysis methodologies and analytical results for the Site is provided in Section 3 of this report; sample locations are shown on Figure 3. This section briefly summarizes the historical analytical data collected during past site investigations by other consultants, as well as the supplemental surficial soil and sediment data collected by Woodard & Curran in November 2006.

4.2.1 Soil

An imminent hazard evaluation considers soil-related exposures at or within 12 inches of ground surface (310 CMR 40.0953(2)). For this evaluation, the nature and extent of contamination in surficial Site soils were therefore characterized based on surficial soil samples collected at the Site between September 1986 and November 2006. Only soil samples collected between 0 and 12 inches below ground surface (bgs) were included in the human health IHE to characterize current exposure. Historical data indicating samples collected over a larger depth interval (e.g., 0-3' bgs) that potentially encompassed soils located greater than 1' bgs were not included in the IHE.

Soil samples collected by previous consultants (i.e., soils collected prior to November 2006) were generally submitted for laboratory analysis of arsenic, cadmium, total chromium, lead, and/or mercury. The majority of samples collected by Woodard & Curran in November 2006 were screened in the field for arsenic, total chromium, and lead using an X-ray fluorescent (XRF) spectrometer. Approximately 30% of the samples screened with the XRF were also submitted for confirmatory laboratory analysis of the same parameters. In addition, soil samples collected by W&C in November 2006 were submitted for laboratory analysis of hexavalent chromium, cyanide (total and/or potentially available) and/or chlorinated dioxins/furans. Soil sampling results used to quantify potential human health risks associated with Site exposures are summarized on Table 3.

Arsenic: A total of 42 soil samples included in the IHE were submitted for laboratory analysis of arsenic, while 30 soil samples were field screened via XRF. Of the 19 soil samples analyzed for arsenic via XRF, five duplicate samples were collected and sent out for laboratory analysis of each parameter to confirm the XRF results. Results between each method of analysis for detected samples varied among samples, with a relative percent difference (RPD) for arsenic ranging from 10% to 47%, with XRF data generally biased low. Although discrepancies exist between the XRF and laboratory analyses for arsenic, the correlation between the two datasets was generally high. Inclusion of the XRF data is thus valuable and appropriate in characterizing the extent of contamination in Site surface soil and sediment and evaluating potential risks.

Concentrations of arsenic detected within surficial Site soils range from 3.92 mg/kg (lab data) to 209 mg/kg (XRF). Highest concentrations of arsenic were generally observed within Areas A, B, and C, although elevated concentrations were also observed in some of the upland areas, particularly within the eastern portion of the Site between the former Beamhouse and Route 128. Arsenic was also detected at 83 mg/kg in the background sample WC-44, suggesting that concentrations of arsenic detected in at least some of the site locations may be reflective of sources unrelated to the site (e.g., natural geochemistry or anthropogenic sources, such as atmospheric deposition).

Chromium: A total of 16 soil samples included in the IHE were submitted for laboratory analysis of total chromium, while 19 soil samples were field-screened via XRF (five of which overlap with laboratory analytical data). Concentrations of total chromium detected within surficial soils ranged from 22.2 mg/kg (lab data) to 5,889 mg/kg (XRF). The highest concentrations total chromium were generally observed within Areas A and B, although variable concentrations of total chromium were generally observed across the Site. Correlation between 2006 XRF and laboratory data for total chromium was relatively high (approximately 99%), with the XRF results biased high. As described below, total chromium was eliminated as a COPC, but hexavalent chromium was retained for further evaluation.

A total of 31 soil samples included in the IHE were submitted for laboratory analysis of hexavalent chromium, with concentrations ranging from 2.6 mg/kg to 333 mg/kg. Concentrations of hexavalent chromium were significantly lower than concentrations of total chromium detected at the Site, generally

comprising less than 10% of the total chromium concentration, although the highest detected hexavalent chromium concentrations generally coincided with soil samples containing elevated total chromium concentrations (within Areas A and B).

Cyanide: A total of 31 surficial soil samples were submitted for laboratory analysis of total cyanide, eight of which were also analyzed for physiologically available cyanide (PAC). Total cyanide was detected at a very low concentration in only one soil sample (0.84 mg/kg, just above the detection limit), while PAC was not detected in any of the submitted soil samples.

Lead: Six surficial soil samples were analyzed for lead in soil; of these, five samples were analyzed via XRF. Results ranged from 32 mg/kg to 126 mg/kg, with the highest concentrations occurring in the samples collected from Areas A and C.

Chlorinated dioxins/furans: Seventeen surficial soil samples were submitted for congener analysis of chlorinated dioxins and furans (CDF). All congener analytes were detected at variable concentrations in all soil samples submitted for analysis, including the one background soil sample WC-44 (albeit at lower concentrations). The highest concentrations were generally detected at locations WC-1 and WC-3 in Area A and WC-41, located at the top of a fill pile north of the gravel road. This location also had elevated concentrations of arsenic and chromium.

4.2.2 Sediment

The nature and extent of contamination in Site sediments were characterized based on sediment samples (1984-2006 samples were collected within 0-18" bgs; 2006 samples were collected within 0-6"bgs) collected at the Site between May 1984 and November 2006. Samples have been collected along the banks of the Crane River, in the appurtenant salt marshes and in the mudflats.

Sediment samples collected by previous consultants (i.e., sediments collected prior to November 2006) were generally submitted for laboratory analysis of arsenic, cadmium, total chromium, copper, lead, mercury, nickel, and/or zinc. Samples collected by W&C in November 2006 were screened in the field for arsenic, total chromium, and lead via XRF. In addition, sediment samples collected at the same location as field-screened samples were submitted for laboratory analysis of hexavalent chromium, total cyanide, PAC, and/or chlorinated dioxins/furans. For samples field-screened for total chromium via XRF, approximately 30% were also submitted for confirmatory laboratory analysis of total chromium. Correlation between XRF and laboratory chromium data was marginal (approximately 75%), with XRF results consistently biased low. In this evaluation, however, we used only hexavalent chromium data, generated from laboratory analysis. Sediment samples field-screened for arsenic and lead were not submitted for confirmatory laboratory analysis of those parameters, as there are historical laboratory data for this medium at similar locations. Sediment data included in the IHE are summarized in Table 4.

Arsenic: Fifty-three sediment samples were analyzed for arsenic. Results ranged from non-detect to 553 mg/kg[1], with the highest concentrations generally found in the salt marsh areas, relative to the mudflats.

Chromium: Thirty-four sediment samples were analyzed for chromium via laboratory and/or XRF analysis. Concentrations of total chromium were variable in sediment, ranging from 59 mg/kg to 5390 mg/kg. Although there is no distinguishable spatial pattern to chromium distribution, concentrations

[1] Note that this concentration in sediment is higher than those detected in Site soils.

appeared higher in historical samples relative to those collected in 2006. Older samples were collected over a greater depth interval (up to 18" bgs) than 2006 samples and may represent historical evidence of impact in sediment, which has since been covered by more recent depositional materials. Twenty sediment samples were analyzed for hexavalent chromium, which was detected in 25% of those samples. Concentrations of hexavalent chromium were generally low when compared with total chromium levels. The highest detected concentration of hexavalent chromium (114 mg/kg) was detected at sample WC-SED-16, located in the saltmarsh along the southeastern bank of the river by the bridge.

Cyanide: Twenty sediment samples were submitted for analysis of total cyanide, with 5 of those samples also analyzed for PAC. Neither total cyanide nor PAC was detected in any of the sediment samples.

Lead: Lead was detected in each of the 22 sediment samples analyzed for this parameter. The range of lead concentrations was within a factor of ten, and there was no distinct pattern of impact. The highest detected concentration of 117 mg/kg was present in the 1984 sample collected by the railroad bridge.

Chlorinated dioxins/furans: Chlorinated dioxins and furans were detected in each of the 10 sediment samples for which these constituents were analyzed. Of the congeners, heptachlorodibenzodioxins (HpCDD) and octochlorodibenzodioxins (OCDD) comprised the greatest percentage of total CDF concentrations in sediment. Concentrations of CDFs were variable across the sampling area, with no clear lateral pattern of distribution. In order to provide for a conservative evaluation of potential short term risks, Dioxins have been carried forward in the evaluation. Future study of Background conditions will be conducted as part of Comprehensive Response Actions to evaluate whether the variable pattern of distribution at the site is a result of Background conditions unrelated to site sources.

4.2.3 Selection of Potential Contaminants of Concern

An IHE considers the potential for short-term risks associated with those constituents whose concentration and toxicity is such that the risks from these constituents will likely dominate the cumulative risk at a Site. For soil and sediment, COPCs include the following constituents:

- Arsenic;
- Hexavalent chromium;
- Lead; and,
- Chlorinated dioxins/furans.

Each of these constituents has been detected in soil and/or sediment at variable levels throughout the Site. Although total chromium was also detected, we evaluated risks associated with only hexavalent chromium, which is significantly more toxic than other chromium species, such as Cr III, which comprise the majority of the total chromium load. Other metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and polychlorinated biphenyls (PCBs) have also been detected within soil samples collected at the Site in 1995 and 1996. However, as per the IRA plan (November 9, 2006) and based on the low frequency of detection and concentration of these constituents, VOCs, SVOCs, PCBs and other detected metals have been excluded as COPCs for this IHE.

As cyanide was detected in only one soil sample (at a concentration just above the detection limit) and as PAC was not detected in any of the samples analyzed for this, we did not include cyanide as a COPC.

4.3 EXPOSURE ASSESSMENT

The objective of the Exposure Assessment is to estimate the type and magnitude of potential exposure to Site-related COPCs present at or migrating from the Site. Exposure is quantified for the populations potentially exposed to contaminated media via specific exposure pathways, based on current and future potential land use. The exposure estimates, which are calculated using chemical-specific exposure point concentrations (EPCs), are combined with dose-response (toxicity) information to characterize the potential risk to human receptors.

For an IHE, only actual exposures under current site uses and activities are considered. Potential human receptors are identified based on characteristics of the Site and surrounding areas and potential exposure scenarios under current Site conditions.

The Site currently consists of vacant, unpaved land (much of which is covered with thick vegetation or building debris from the former facility), and is situated in a mixed commercial and residential area of Danvers, Massachusetts. Lightly vegetated footpaths transverse the Site in several locations. The Crane River borders the Site to the north. Access to the river is difficult in many areas of the Site, however, due to the steep bank and thick vegetation.

Although the Site is currently vacant, access to the Site is currently unrestricted and there is visual evidence of trespassing (paintballs, footpaths, etc.). For the IHE, we therefore evaluated potential short-term (5 year) health risks associated with a trespassing scenario. We assumed that a youth (age 6 to 11 years) trespasser/recreational user of the Site may be exposed to the identified COPCs in both Site surface soils and sediments. Routes of exposure evaluated include incidental ingestion of and dermal contact with soil and sediment. Additionally, trespassers may potentially inhale COPCs entrained on fugitive dust resulting from uncovered soil.

4.3.1 Exposure Assumptions

Exposure assumptions for the trespasser scenario are summarized by medium on Table 5 (soil), Table 6 (fugitive dust) and Table 7 (sediment). Woodard & Curran conservatively assumed that a trespasser/recreational receptor would be exposed to soil three days per week, and to sediment two days per week, during the seven non-winter months (April through October) when the ground is not frozen and/or covered by snow and would come into contact with soil or sediment during each exposure event. As discussed, the IHE evaluates short-term exposures of 5 years (310 CMR 40.0953(1)). For incidental ingestion of soil and sediment, Woodard & Curran assumed that a trespasser/recreational receptor would receive the full dose from the Site and ingest 50 mg soil/sediment per day. This value is the daily soil ingestion rate recommended for this age group by MassDEP (1995). We assumed an exposure time of 1 hour per day to evaluate fugitive dust exposures.

The skin surface area used to evaluate dermal exposures to soil for the trespasser/recreational receptor assumed that the hands, forearms and feet would be exposed during a Site visit, to reflect exposures typical of walking across the Site. The 50th percentile surface area of male and female children ages 6 to 11, based on the assumed body parts, was used to estimate daily dermal intake rates (MassDEP, 1995). The soil adherence factor of 0.14 mg/cm^2 was based on MassDEP's recommendation for a trespasser scenario (MassDEP, 2002c), which W&C assumed was representative of typical outdoor exposures anticipated for this age group.

The skin surface area used to evaluate dermal exposures to sediment for the trespasser/recreational receptor assumed that the hands, forearms, lower legs, and feet would be exposed during a Site visit, to

reflect exposures typical of wading. The 50th percentile skin surface area of male and female children ages 6 to 11, based on the assumed body parts, was used to estimate daily dermal intake rates (MassDEP, 1995). The sediment adherence factor of 1 mg/cm^2 was based on MassDEP's recommendation for exposures to sediment (MassDEP, 2002c), which is not weighted by skin surface area.

Specific exposure assumptions used to estimate exposure for the trespasser scenario are summarized on Tables 5-7. Exposures were quantified using the general exposure equations for average daily dose/exposures, as provided in MassDEP risk guidance; these equations are provided on Tables 5-7. Exposures were adjusted by MassDEP relative absorption factors, which are summarized on Table 8, in order to account for absorption of COPCs via different exposure routes (oral and dermal).

4.3.2 Exposure Point Concentrations

Exposure point concentrations (EPCs) are estimates of the chemical concentrations to which a potential receptor is likely to be exposed under current and reasonably foreseeable future Site activities and uses, and are dependent upon the exposure period and pathway. In deriving EPCs, W&C considered the dataset discussed previously in the Hazard Identification. In instances where samples were analyzed for a constituent (e.g., arsenic, lead) via both XRF screening and fixed laboratory, however, we used only the laboratory analytical results for that sample. For the dioxin/furan data, where more than one result was reported (i.e., "estimated" concentration, or a reanalysis of a sample), we conservatively used the highest reported or estimated concentration as the final result for that sample.

The soil and sediment datasets were evaluated with respect to lateral distribution of concentrations. Overall, concentrations in each medium appeared variable with no one location showing significantly elevated concentrations with respect to surrounding locations. We did not identify any hotspots at the Site, given the lateral distribution of concentrations and potential for actual exposures to occur. We therefore used the arithmetic mean concentration as the EPC of each COPC in both soil and sediment at the Site. In instances where a COPC was not detected in a sample, we used 1/2 the laboratory reporting limit (LRL) as the concentration for that sample. EPCs are summarized in Table 9.

4.4 DOSE-RESPONSE ASSESSMENT

The dose-response assessment describes the relationship between the level of exposure and the likelihood and/or severity of an adverse effect. In other words, the dose-response assessment quantifies the toxicity of each chemical of concern using information obtained from published literature describing epidemiologic or toxicological studies.

Tables 10 through 13 provide summaries of the toxicity values for carcinogenic and noncarcinogenic effects. Toxicity information was obtained from the USEPA IRIS database when available, or from MassDEP recommended values (MassDEP 2006), and is summarized in Tables 10-13. For chlorinated dioxin and furan congeners, we applied the MassDEP Toxicity Equivalency Factors (TEFs) for each congener to the USEPA Cancer Slope Factor and Inhalation Unit Risk values (USEPA 1997) for 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD), which is the most toxic of the congeners.

4.5 CHARACTERIZATION OF RISK TO HUMAN HEALTH

A summary of risk estimates for the youth trespasser is presented in Table 14. Risk calculations for exposures to soil, fugitive dust and sediment are presented in Tables 15 through 19. As shown, the cumulative noncancer hazard index (HI) of 0.3 is well below the MCP Imminent Hazard risk limit of 10; however, the excess lifetime cancer risk (ELCR) of 4 x 10^{-5} exceeds the MCP cancer risk limit of 1 x 10^{-5}

(310 CMR 40.0955(2)(b,c)). Cancer risks are primarily related to dermal and ingestion exposures to chlorinated dioxins/furans and, to a lesser extent, arsenic in soil and sediment.

The risk to human health at the Site is driven most strongly by dioxin and arsenic in soils. Concentrations of dioxins at WC-1, WC-3 (Area A), and WC-41 (Upland) and arsenic at WC-11 (Area A) and WC-16 (Area B) have been identified as the sample locations with the greatest influence on the Imminent Hazard identification. Therefore, it is concluded that concentrations of COPCs in surficial soil and sediment pose an Imminent Hazard to human health.

4.6 RISK OF HARM TO THE ENVIRONMENT

The risk of harm to the environment was evaluated with respect to the following conditions set forth in the MCP (310 CMR 40.0955(3)):

- Evidence of stressed biota attributable to the release at the Site (e.g., fish kills or abiotic conditions)
- A release to the environment of oil and/or hazardous materials which produces immediate or acute adverse impacts to freshwater or saltwater fish populations.

The Site consists of both upland and wetland areas bordering the Crane River. As the Site has remained unused since the tannery ceased operations in 1984 the facility was demolished approximately one year ago, thick stands of vegetation (grasses, shrubs, and trees) have overgrown upland portions of the Site, with the exception of the debris piles and building foundation/paved areas. The Site is bordered to the east by the Crane River and appurtenant marshland. The riverbanks are vegetated with typical marsh vegetation. W&C personnel have observed evidence of songbirds and mammals at the Site.

As no stressed biota have been observed at the Site and as no acute adverse impacts have been attributed to the release, it is concluded that Site conditions do not present an Imminent Hazard to the environment (310 CMR 40.0955(4)).

5. PROPOSED IMMEDIATE RESPONSE ACTIONS

5.1 ASBESTOS-CONTAINING BUILDING MATERIALS

The building debris in the former Beamhouse area includes some asbestos containing materials that need to be managed accordingly. Oral Notification was previously made for this and a Release Tracking Number is being assigned. The debris will need to be handled by an environmental cleanup contractor that is licensed to work with asbestos containing materials. A licensed asbestos inspector will be onsite during cleanup activities to monitor the work and be present in the event that unexpected materials are uncovered during excavation. Machine operators must have, at a minimum, a two-hour asbestos awareness training administered by a licensed asbestos inspector. If it becomes necessary to cut concrete that has ACM attached to it, a containment structure will need to be built by an approved contractor. A copy of the Asbestos Abatement Plan for conduct of the proposed work is included as Appendix B.

5.2 IMMINENT HAZARD SOILS

Chemicals of Potential Concern at the Site pose an Imminent Hazard and a risk to human health. The primary drivers of this risk are dioxins in soils at WC-1, WC-3, and WC-41, and arsenic in soils at WC-11 and WC-16, indicating that soils in Area A, Area B and the Upland Soils in one sampling location between Route 128 and the Beamhouse pose potential Imminent Hazards to human receptors. Immediate response actions will be undertaken to address the hazard posed by these soils. Pending weather conditions and approval of the Danvers Conservation Commission, soils in these areas will be fenced to prevent human contact with the soils as a short term measure. Fencing will be installed around the areas previously identified as Area A and Area B on the attached site plan. The presence of dioxins at the location of WC-41 (upland soils) is assumed present as a result of filling activities associated with former site operations. In response, fencing will be installed based on topography in the immediate vicinity of this sample to prevent access to soils in elevated areas which may represent net areas of fill. Remediation of the soils in areas driving the Imminent Hazard will occur as part of Comprehensive Response Actions that will occur at the Site to address both short and long term exposure risks. The extent of soil remediation will be determined once cleanup goals have been set, which, at a minimum, will reduce COPC concentrations to a level that does not pose a significant risk to human health.

5.3 MANAGEMENT OF REMEDIAL WASTES

All ACM originating from the building debris will be sent off-site to an approved receiving facility and managed by waste manifest protocol. No additional remedial waste generation is proposed in this plan.

5.4 STATE, FEDERAL, AND LOCAL PERMITTING REQUIREMENTS

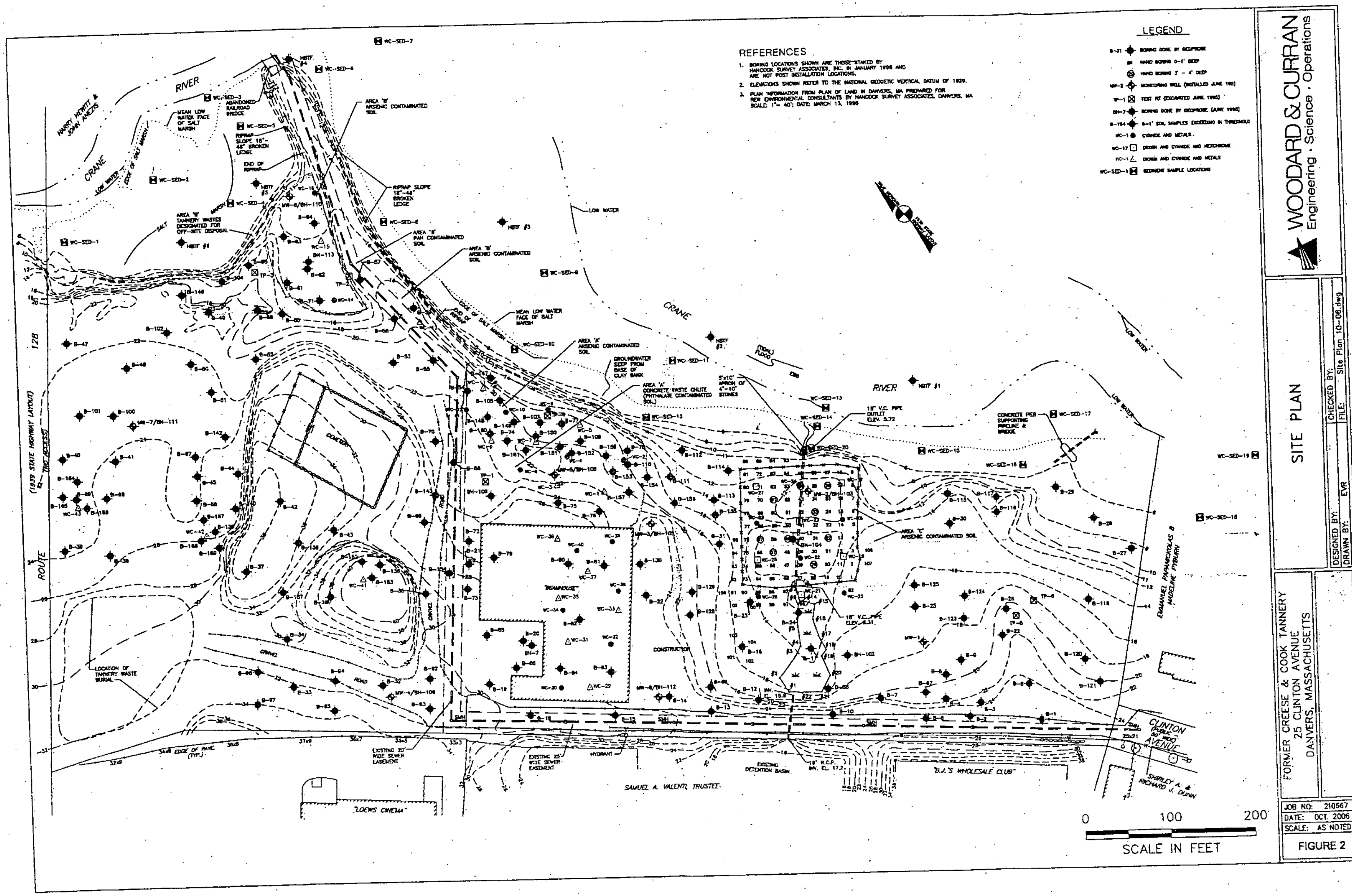
In addition to approval by the Bureau of Waste Site Cleanup for work as proposed in this plan, notification will be provided to the MassDEP and the Department of Occupational Safety as required at least 10 calendar days prior to conduct of the asbestos removal work.

5.5 SCHEDULE FOR PROPOSED ACTIVITIES

If approved by MassDEP as written, activities for the removal of asbestos from the building debris will begin after the first of the year. Bidding and contractor selection will occur in January. Contractor selection will be based on licensing and qualifications. Weather pending, removal will occur by the end

of February. Documentation of the removal and disposal will be provided in an Immediate Response Action Completion Report following completion of the activities.

Bidding and procurement for the installation of fencing will also be conducted in January. Pending weather conditions and local City approvals, fencing installation will be conducted in January/February and documentation detailing these activities will be provided within 60 days of this plan update submittal (February 26).


LEGEND
REFERENCES
ROUTE 128
(1939 STATE HIGHWAY LAYOUT)
(NO ACCESS)
CRANE RIVER
LOW WATER
CLINTON AVENUE
"LOEWS CINEMA"
SAMUEL A. VALENTI, TRUSTEE
"B.J.'S WHOLESALE CLUB"
EMMANUEL PAPANICKOLAS & MADELINE PYBURN
SHIRLEY A. & RICHARD J. DUNN
0
100
200
SCALE IN FEET
WOODARD & CURRAN
Engineering · Science · Operations
SITE PLAN
FORMER CREESE & COOK TANNERY
25 CLINTON AVENUE
DANVERS, MASSACHUSETTS
DESIGNED BY:
DRAWN BY: EVR
CHECKED BY:
FILE: Site Plan 10-06.dwg
JOB NO: 210567
DATE: OCT. 2006
SCALE: AS NOTED
FIGURE 2

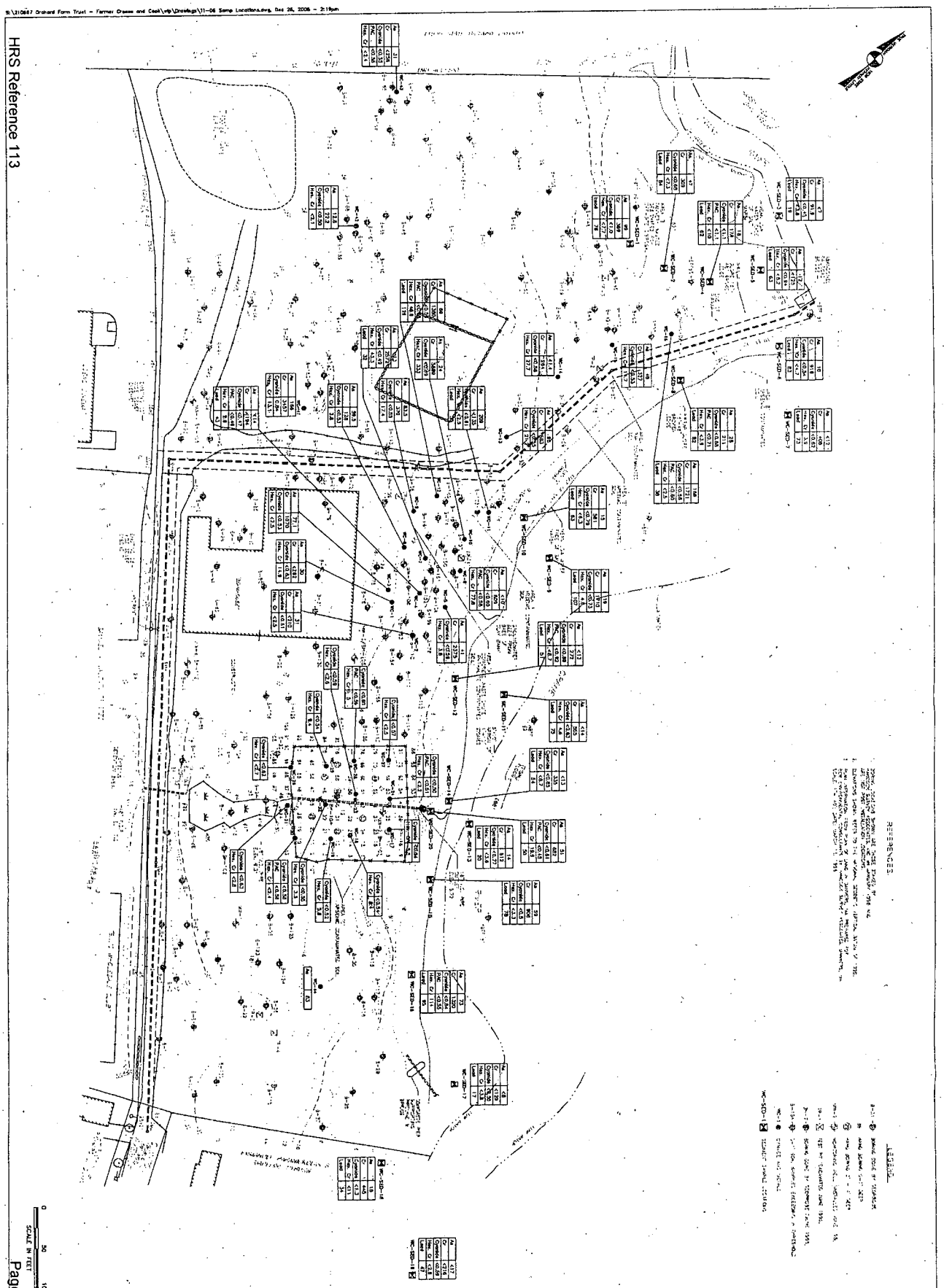


FIGURE 3

FORMER CREESE & COOK TANNERY
25 CLINTON AVENUE
DANVERS, MASSACHUSETTS

NOVEMBER 2006
SAMPLING RESULTS

WOODARD & CURRAN
Engineering · Science · Operations
1520 HIGHLAND AVENUE CHESHIRE, CONNECTICUT

TABLE 1

ANALYTICAL TESTING SUMMARY
SEDIMENT AND SOIL SAMPLING
Former Creese Cook Tannery, Danvers, MA

Sample Location	Location	Sample Depth (ft bgs)	Analytical Parameters							Rationale
			Cyanide	Physiologically Available Cyanide[1]	Dioxin	Arsenic	Total Chromium	Hexavalent Chromium	Total Organic Carbon	
Soil Samples										
WC-1	Landfill Area A	0 - 1	X		X	X[1]	X[1]	X		to yield data for IHE
WC-2	Landfill Area A	0 - 1	X			X[1]	X[1]	X		to yield data for IHE
WC-3	Landfill Area A	0 - 1	X		X	X[2]	X[2]	X		to yield data for IHE
WC-4	Landfill Area A	0 - 1	X	X		X[1]	X[1]	X		to yield data for IHE
WC-5	Landfill Area A	0 - 1	X		X	X[1]	X[1]	X		to yield data for IHE
WC-6	Landfill Area A	0 - 1	X			X[2]	X[2]	X		to yield data for IHE
WC-7	Landfill Area A	0 - 1	X		X	X[1]	X[1]	X		to yield data for IHE
WC-8	Landfill Area A	0 - 1	X	X		X[1]	X[1]	X		to yield data for IHE
WC-9	Landfill Area A	0 - 1	X		X	X[2]	X[2]	X		to yield data for IHE
WC-10	Landfill Area A	0 - 1	X			X[1]	X[1]	X		to yield data for IHE
WC-11	Landfill Area A	0 - 1	X		X	X[1]	X[1]	X		to yield data for IHE
WC-12	Landfill Area A	0 - 1	X	X		X[1]	X[1]	X		to yield data for IHE
WC-13	Landfill Area B	0 - 1	X		X	X[1]	X[1]	X		to yield data for IHE
WC-14	Landfill Area B	0 - 1	X			X[2]	X[2]	X		to yield data for IHE
WC-15	Landfill Area B	0 - 1	X		X	X[1]	X[1]	X		to yield data for IHE
WC-16	Landfill Area B	0 - 1	X	X		X[1]	X[1]	X		to yield data for IHE
WC-17	Lagoon Area C	0 - 1	X		X			X		to yield data for IHE
WC-18	Lagoon Area C	0 - 1	X					X		to yield data for IHE
WC-19	Lagoon Area C	0 - 1	X		X			X		to yield data for IHE
WC-20	Lagoon Area C	0 - 1	X	X				X		to yield data for IHE
WC-21	Lagoon Area C	0 - 1	X		X			X		to yield data for IHE
WC-22	Lagoon Area C	0 - 1	X					X		to yield data for IHE
WC-23	Lagoon Area C	0 - 1	X		X			X		to yield data for IHE
WC-24	Lagoon Area C	0 - 1	X	X				X		to yield data for IHE
WC-25	Lagoon Area C	0 - 1	X		X			X		to yield data for IHE
WC-26	Lagoon Area C	0 - 1	X					X		to yield data for IHE
WC-27	Lagoon Area C	0 - 1	X		X			X		to yield data for IHE
WC-28	Lagoon Area C	0 - 1	X	X				X		to yield data for IHE
WC-41	Uplands	0 - 1	X		X	X[1]	X[1]	X		to yield data for IHE
WC-42	Uplands	0 - 1	X		X	X[2]	X[2]	X		to yield data for IHE
WC-43	Uplands	0 - 1	X	X	X	X[1]	X[1]	X		to yield data for IHE
	Total # of Soil Samples		31	8	17	19	19	31	0	
Sediment Samples										
WC-SED-1	Crane River - salt marsh	0 - 0.5	X		X		X[1]	X		to yield data for IHE
WC-SED-2	Crane River - salt marsh	0 - 0.5	X				X[1]	X	X	to yield data for IHE
WC-SED-3	Crane River - mud flats	0 - 0.5	X		X		X[2]	X	X	to yield data for IHE
WC-SED-4	Crane River - salt marsh	0 - 0.5	X	X	X		X[1]	X		to yield data for IHE
WC-SED-5	Crane River - salt marsh	0 - 0.5	X				X[1]	X		to yield data for IHE
WC-SED-6	Crane River - salt marsh	0 - 0.5	X		X		X[2]	X		to yield data for IHE
WC-SED-7	Crane River - mud flats	0 - 0.5	X				X[1]	X		to yield data for IHE
WC-SED-8	Crane River - salt marsh	0 - 0.5	X	X			X[1]	X	X	to yield data for IHE
WC-SED-9	Crane River - mud flats	0 - 0.5	X		X		X[2]	X	X	to yield data for IHE
WC-SED-10	Crane River - salt marsh	0 - 0.5	X				X[1]	X		to yield data for IHE
WC-SED-11	Crane River - mud flats	0 - 0.5	X				X[1]	X		to yield data for IHE
WC-SED-12	Crane River - salt marsh	0 - 0.5	X	X	X		X[1]	X		to yield data for IHE
WC-SED-13	Crane River - mud flats	0 - 0.5	X		X		X[2]	X		to yield data for IHE
WC-SED-14	Crane River - salt marsh	0 - 0.5	X				X[1]	X	X	to yield data for IHE
WC-SED-15	Crane River - salt marsh	0 - 0.5	X				X[1]	X		to yield data for IHE
WC-SED-16	Crane River - salt marsh	0 - 0.5	X	X	X		X[2]	X		to yield data for IHE
WC-SED-17	Crane River - mud flats	0 - 0.5	X				X[1]	X	X	to yield data for IHE
WC-SED-18	Crane River - salt marsh	0 - 0.5	X				X[2]	X		to yield data for IHE
WC-SED-19	Crane River - mud flats	0 - 0.5	X		X		X[1]	X		to yield data for IHE
WC-SED-20	Crane River - salt marsh	0 - 0.5	X	X	X	X[1]	X[1]	X		to yield data for IHE
	Total # of Sediment Samples		20	5	10	1	20	20	6	
Duplicate Samples										
WC-101	duplicate of WC-23	0 - 1	X		X			X		to yield data for IHE
	Total # of Duplicate Samples		1	0	1	0	0	1	0	to yield data for IHE
Background Samples										
WC-44	southeast property near R/R	0 - 1			X	X				to yield data for IHE
	Total # of Background Samples		0	0	1	1	0	0	0	to yield data for IHE

Notes

X = Sample will be submitted for laboratory analysis of this parameter by methods indicated below.

X[1] = Sample will be analyzed in the field by X-ray Fluorescence Spectroscopy (XRF)

X[2] = Sample will be field analyzed by XRF and also submitted to the lab for confirmatory analysis by methods indicated below.

1 = The analysis of 25% of samples for Physiologically Available Cyanide (PAC) was added to the analysis plan on 12/1/05.

Cyanide will be analyzed by EPA Method 9010B

Dioxin will be analyzed by EPA Method 8290

Laboratory analysis of Arsenic and Total Chromium will be conducted by EPA Method 6010B.

Laboratory analysis of Hexavalent Chromium will be conducted by EPA Method 7196A

TABLE 2

ANALYTICAL RESULTS
SEDIMENT AND SOIL SAMPLING
Former Creese Cook Tannery, Danvers, MA

Sample Location	Location	Sample Depth (ft bgs)	Sample Date	Analytical Parameters								
				Arsenic (XRF result)	Arsenic (Lab result)	Total Chromium (XRF result)	Total Chromium (Lab result)	Cyanide	PAC Cyanide	Hexavalent Chromium (Lab result)	Percent Solids	Lead (XRF result)
Soil Samples												
WC-1	Landfill Area A	0 - 1	11/21/06	30	--	< 262	--	< 0.63	--	14.9	77.2	--
WC-2	Landfill Area A	0 - 1	11/21/06	31	--	< 210	--	< 0.61	--	< 2.5	81	--
WC-3	Landfill Area A	0 - 1	11/21/06	65	77.1	1312	1070	< 0.53	--	< 2.5	80	--
WC-4	Landfill Area A	0 - 1	11/21/06	< 14	--	< 194	--	< 0.47	< 0.49	2.6	91.1	43
WC-5	Landfill Area A	0 - 1	11/21/06	41	--	2375	--	< 0.59	--	17.1	79.9	--
WC-6	Landfill Area A	0 - 1	11/21/06	37	59.5	< 230	128	< 0.53	--	3.8	86.1	--
WC-7	Landfill Area A	0 - 1	11/21/06	< 13	--	2572	--	< 0.49	--	43.3	87.1	32
WC-8	Landfill Area A	0 - 1	11/21/06	< 10	--	809	--	< 0.60	< 0.58	77.8	82.4	--
WC-9	Landfill Area A	0 - 1	11/21/06	75	83.5	625	370	< 0.55	--	17.4	81.3	--
WC-10	Landfill Area A	0 - 1	11/21/06	24	--	5889	--	< 0.69	--	333	68.5	--
WC-11	Landfill Area A	0 - 1	11/21/06	209	--	< 135	--	< 0.61	--	< 2.5	78.8	50
WC-12	Landfill Area A	0 - 1	11/21/06	89	--	1380	--	< 0.55	< 0.58	48.6	78.9	126
WC-13	Landfill Area B	0 - 1	11/21/06	96	--	883	--	< 0.55	--	21.2	86.2	--
WC-14	Landfill Area B	0 - 1	11/21/06	30	41.4	406	264	< 0.56	--	27.7	86.9	--
WC-15	Landfill Area B	0 - 1	11/21/06	48	--	327	--	< 0.53	--	14.7	91.3	--
WC-16	Landfill Area B	0 - 1	11/21/06	169	--	1721	--	< 0.56	< 0.60	< 2.5	80.9	38
WC-17	Lagoon Area C	0 - 1	11/22/06	--	--	--	--	<0.54	--	5.5	85.9	--
WC-18	Lagoon Area C	0 - 1	11/22/06	--	--	--	--	<0.54	--	8.4	85.5	--
WC-19	Lagoon Area C	0 - 1	11/22/06	--	--	--	--	<0.52	--	5.8	90.9	--
WC-20	Lagoon Area C	0 - 1	11/22/06	--	--	--	--	<0.58	< 0.58	< 2.4	84	--
WC-21	Lagoon Area C	0 - 1	11/22/06	--	--	--	--	<0.63	--	<2.8	71.8	--
WC-22	Lagoon Area C	0 - 1	11/22/06	--	--	--	--	<0.55	--	3.5	87.3	--
WC-23	Lagoon Area C	0 - 1	11/22/06	--	--	--	--	<0.59	--	<2.6	77.7	--
WC-101	Lagoon Area C	0 - 1	11/22/06	--	--	--	--	< 0.63	--	< 2.6	78.4	--
WC-24	Lagoon Area C	0 - 1	11/22/06	--	--	--	--	<0.50	< 0.51	< 2.2	90.6	--
WC-25	Lagoon Area C	0 - 1	11/22/06	--	--	--	--	<0.54	--	9.4	83.7	--
WC-26	Lagoon Area C	0 - 1	11/22/06	--	--	--	--	<0.62	--	<2.7	73.4	--
WC-27	Lagoon Area C	0 - 1	11/22/06	--	--	--	--	<0.57	--	<2.5	79.1	--
WC-28	Lagoon Area C	0 - 1	11/22/06	--	--	--	--	<0.60	< 0.59	5	80.9	--
WC-41	Uplands	0 - 1	11/21/06	166	--	3457	--	0.84	--	13.1	81.2	--
WC-42	Uplands	0 - 1	11/21/06	20	12.8	< 224	22.2	<0.50	--	<2.1	93.8	--
WC-43	Uplands	0 - 1	11/21/06	31	--	< 258	--	<0.55	<0.55	<2.4	84.7	--
Sediment Samples												
WC-SED-1	Crane River - salt marsh	0 - 0.5	11/22/06	99	--	399	--	< 1.0	--	< 7.7	26	76
WC-SED-2	Crane River - salt marsh	0 - 0.5	11/22/06	47	--	309	--	< 0.68	--	< 7.3	27.4	84
WC-SED-3	Crane River - mud flats	0 - 0.5	11/22/06	< 7	--	< 112	91.9	<0.45	--	< 3.8	53.2	19
WC-SED-4	Crane River - salt marsh	0 - 0.5	11/22/06	16	--	174	--	<1.1	< 1.1	< 10	19.4	62
WC-SED-5	Crane River - salt marsh	0 - 0.5	11/22/06	12	--	< 125	--	<0.94	--	< 8.2	24.3	63
WC-SED-6	Crane River - salt marsh	0 - 0.5	11/22/06	18	--	386	916	<0.54	--	< 4.7	42.6	83
WC-SED-7	Crane River - mud flats	0 - 0.5	11/22/06	< 12	--	408	--	<0.62	--	3.9	52.7	73
WC-SED-8	Crane River - salt marsh	0 - 0.5	11/22/06	28	--	211	--	<0.68	< 0.71	< 3.9	50.7	82
WC-SED-9	Crane River - mud flats	0 - 0.5	11/22/06	19	--	637	1710	<0.73	--	4.8	46.2	107
WC-SED-10	Crane River - salt marsh	0 - 0.5	11/22/06	15	--	581	--	<0.79	--	< 6.3	31.5	63
WC-SED-11	Crane River - mud flats	0 - 0.5	11/22/06	< 14	--	555	--	<0.63	--	4.6	48.6	75
WC-SED-12	Crane River - salt marsh	0 - 0.5	11/22/06	< 13	--	272	--	<0.89	< 0.92	< 8.7	22.9	51
WC-SED-13	Crane River - mud flats	0 - 0.5	11/22/06	14	--	463	512	<0.77	--	< 3.6	55.9	20
WC-SED-14	Crane River - salt marsh	0 - 0.5	11/21/06	< 13	--	335	--	<0.85	--	< 6.7	29.9	54
WC-SED-15	Crane River - salt marsh	0 - 0.5	11/21/06	59	--	908	--	<0.50	--	< 3.3	60.4	78
WC-SED-16	Crane River - salt marsh	0 - 0.5	11/21/06	73	--	407	1320	<0.54	< 0.55	114	48.7	95
WC-SED-17	Crane River - mud flats	0 - 0.5	11/22/06	< 8	--	< 120	--	<0.55	--	< 3.8	53	17
WC-SED-18	Crane River - salt marsh	0 - 0.5	11/21/06	18	--	241	445	<1.3	--	< 11	18.6	34
WC-SED-19	Crane River - mud flats	0 - 0.5	11/22/06	< 17	--	< 216	--	<0.59	--	< 2.8	72.7	47
WC-SED-20	Crane River - salt marsh	0 - 0.5	11/21/06	51	--	682	--	< 0.61	< 0.45	19.9	54.2	50
Background Samples												
WC-44	southeast area near R/R	0 - 1	11/22/06	--	83	--	--	--	--	--	75.9	--

Notes
1 - All units are mg/kg (ppm) unless otherwise indicated
2 - Dioxin data is presented in Tables 3 and 4 (Soil and Sediment, respectively)
3 - Sample WC-101 is a duplicate of sample WC-23

TABLE 3
SUMMARY OF SOIL DATA
ZERO TO ONE FOOT BELOW GROUND SURFACE
Former Crease and Cook Tannery
Danvers, Massachusetts

CAS Number (if available)					7440-38-2	7440-43-9	7440-47-3	18540-29-9	7439-92-1
Sample ID	Sample Date	Sample Depth Interval (ft bgs) Top	Bottom	Area	Arsenic (mg/kg)	Cadmium (mg/kg)	Total Chromium (mg/kg)	Hexavalent Chromium (mg/kg)	Lead (mg/kg)
Lagoon 1 Top	9/10/1986	0	0.5	Area C - Site Wide Arsenic	6.24 [3]	0.745	1240 [3]	--	78.6 [3]
SS-1	7/21/1995	0	0.3	Area C	46.5 [3]	--	--	--	--
SS-2	7/21/1995	0	0.3	Area C	31.7 [3]	--	--	--	--
SS-3	7/21/1995	0	0.3	Area C	57.8 [3]	--	--	--	--
SS-4	7/21/1995	0	0.3	Area C	35.9 [3]	--	--	--	--
SS-5	7/21/1995	0	0.3	Area C	33.6 [3]	--	--	--	--
SS-6	7/21/1995	0	0.3	Area C	25.9 [3]	--	--	--	--
C-1	8/30/1995	0.2	0.5	Area C	19.1 [3]	--	88.8 [3]	--	--
C-2	8/30/1995	0.2	0.5	Area C	49.0 [3]	--	--	--	--
C-3	8/30/1995	0.2	0.5	Area C	4.58 [3]	--	--	--	--
C-4	8/30/1995	0.2	0.5	Area C	16.9 [3]	--	--	--	--
C-5	8/30/1995	0.2	0.5	Area C	24.0 [3]	--	23.0 [3]	--	--
C-6	8/30/1995	0.2	0.5	Area C	75.9 [3]	--	--	--	--
C-7	8/30/1995	0.2	0.5	Area C	47.7 [3]	--	214 [3]	--	--
C-8	8/30/1995	0.2	0.5	Area C	15.7 [3]	--	--	--	--
C-9	8/30/1995	0.2	0.5	Area C	79.0 [3]	--	407 [3]	--	--
C-10	8/30/1995	0.2	0.5	Area C	17.3 [3]	--	--	--	--
C-11	8/30/1995	0.2	0.5	Area C	40.7 [3]	--	--	--	--
C-12	8/30/1995	0.2	0.5	Area C	24.8 [3]	--	--	--	--
C-13	8/30/1995	0.2	0.5	Area C	18.7 [3]	--	86.3 [3]	--	--
C-14	8/30/1995	0.2	0.5	Area C	20.2 [3]	--	--	--	--
C-15	8/30/1995	0.2	0.5	Area C	16.0 [3]	--	--	--	--
C-16	8/30/1995	0.2	0.5	Area C	32.9 [3]	--	--	--	--
C-17	8/30/1995	0.2	0.5	Area C	21.8 [3]	--	109 [3]	--	--
C-18	8/30/1995	0.2	0.5	Area C	37.0 [3]	--	--	--	--
C-19	8/30/1995	0.2	0.5	Area C	57.9 [3]	--	289 [3]	--	--
C-20	8/30/1995	0.2	0.5	Area C	19.3 [3]	--	--	--	--
C-21	8/30/1995	0.2	0.5	Area C	7.50 [3]	--	326 [3]	--	--
C-22	8/30/1995	0.2	0.5	Area C	6.10 [3]	--	1220 [3]	--	--
C-23	8/30/1995	0.2	0.5	Area C	13.0 [3]	--	--	--	--
C-24	8/30/1995	0.2	0.5	Area C	25.4 [3]	--	--	--	--
C-25	8/30/1995	0.2	0.5	Area C	18.3 [3]	--	26.2 [3]	--	--
BS-1	8/30/1995	0.2	0.5	Unknown	36.9 [3]	--	--	--	--
BS-2	8/30/1995	0.2	0.5	Unknown	3.92 [3]	--	--	--	--
BS-3	8/30/1995	0.2	0.5	Unknown	9.74 [3]	--	--	--	--
BS-4	8/30/1995	0.2	0.5	Unknown	33.8 [3]	--	--	--	--
BS-5	8/30/1995	0.2	0.5	Unknown	19.7 [3]	--	--	--	--
HB-14	5/13/1996	0	1	Area C	7.81 [3]	--	--	--	--
HB-51	5/13/1996	0	1	Area C	54.3 [3]	--	--	--	--
HB-56	5/15/1996	0	1	Area C	22.4 [3]	--	--	--	--
HB-58	5/13/1996	0	1	Area C	25.2 [3]	--	--	--	--
HB-61	5/13/1996	0	1	Area C	105 [3]	--	--	--	--
HB-62	5/13/1996	0	1	Area C	98.8 [3]	--	--	--	--
HB-83	5/13/1996	0	1	Area C	97.6 [3]	--	--	--	--
HB-85	5/13/1996	0	1	Area C	16.3 [3]	--	--	--	--
HB-89	5/13/1996	0	1	Area C	147 [3]	--	--	--	--
HB-98	5/15/1996	0	1	Area C	149 [3]	--	--	--	--
HB-103	5/13/1996	0	1	Area C	82.2 [3]	--	--	--	--

TABLE 3
SUMMARY OF SOIL DATA
ZERO TO ONE FOOT BELOW GROUND SURFACE
Former Crane and Cook Tannery
Danvers, Massachusetts

CAS Number (if available)					7440-38-2	7440-43-9	7440-47-3	18540-29-9	7439-92-1
Sample ID	Sample Date	Sample Depth Interval (ft bgs) Top	Bottom	Area	Arsenic (mg/kg)	Cadmium (mg/kg)	Total Chromium (mg/kg)	Hexavalent Chromium (mg/kg)	Lead (mg/kg)
WC-1	11/21/2006	0	1	Landfill Area A	30.0 [4]	--	262 U [4]	14.9	--
WC-2	11/21/2006	0	1	Landfill Area A	31.0 [4]	--	210 U [4]	2.50 U	--
WC-3	11/21/2006	0	1	Landfill Area A	77.1 [3]	--	1070 [3]	2.50 U	--
WC-4	11/21/2006	0	1	Landfill Area A	14.0 U [4]	--	194 U [4]	2.60	43.0 [4]
WC-5	11/21/2006	0	1	Landfill Area A	41.0 [4]	--	2375 [4]	17.1	--
WC-6	11/21/2006	0	1	Landfill Area A	59.5 [3]	--	128 [3]	3.80	--
WC-7	11/21/2006	0	1	Landfill Area A	13.0 U [4]	--	2572 [4]	43.3	32.0 [4]
WC-8	11/21/2006	0	1	Landfill Area A	10.0 U [4]	--	809 [4]	77.8	--
WC-9	11/21/2006	0	1	Landfill Area A	83.5 [3]	--	370 [3]	17.4	--
WC-10	11/21/2006	0	1	Landfill Area A	24.0 [4]	--	5889 [4]	333	--
WC-11	11/21/2006	0	1	Landfill Area A	209 [4]	--	135 U [4]	2.50 U	50.0 [4]
WC-12	11/21/2006	0	1	Landfill Area A	89 [4]	--	1380 [4]	48.6	126 [4]
WC-13	11/21/2006	0	1	Landfill Area B	96 [4]	--	683 [4]	21.2	--
WC-14	11/21/2006	0	1	Landfill Area B	41.4 [3]	--	264 [3]	27.7	--
WC-15	11/21/2006	0	1	Landfill Area B	48 [4]	--	327 [4]	14.7	--
WC-16	11/21/2006	0	1	Landfill Area B	169 [4]	--	1721 [4]	2.50 U	38.0 [4]
WC-17	11/22/2006	0	1	Lagoon Area C	--	--	--	5.50	--
WC-18	11/22/2006	0	1	Lagoon Area C	--	--	--	8.40	--
WC-19	11/22/2006	0	1	Lagoon Area C	--	--	--	5.80	--
WC-20	11/22/2006	0	1	Lagoon Area C	--	--	--	2.40 U	--
WC-21	11/22/2006	0	1	Lagoon Area C	--	--	--	2.80 U	--
WC-22	11/22/2006	0	1	Lagoon Area C	--	--	--	3.50	--
WC-23 [9]	11/22/2006	0	1	Lagoon Area C	--	--	--	2.60 U	--
WC-24	11/22/2006	0	1	Lagoon Area C	--	--	--	2.20 U	--
WC-25	11/22/2006	0	1	Lagoon Area C	--	--	--	9.40	--
WC-26	11/22/2006	0	1	Lagoon Area C	--	--	--	2.70 U	--
WC-27	11/22/2006	0	1	Lagoon Area C	--	--	--	2.50 U	--
WC-28	11/22/2006	0	1	Lagoon Area C	--	--	--	5.00	--
WC-41	11/21/2006	0	1	Uplands	166 [4]	--	3457 [4]	13.1	--
WC-42	11/21/2006	0	1	Uplands	12.8 [3]	--	22.2 [3]	2.10 U	--
WC-43	11/21/2006	0	1	Uplands	31.0 [4]	--	258 U [4]	2.40 U	--
Number of Samples					67	1	30	31	6
Number of Detections					64	1	25	19	6
Arithmetic Mean Concentration [8]					46.0	0.745	854	22.9	61.3
Minimum Detected Concentration					3.92	0.745	22.2	2.60	32.0
Maximum Detected Concentration					209	0.745	5889	333	126
Location of Maximum Detected Concentration					WC-11	Lagoon 1 Top	WC-10	WC-10	WC-12
Imminent Hazard Screening Criteria [1]					40	60	200	200	NE

TABLE 3
SUMMARY OF SOIL DATA
ZERO TO ONE FOOT BELOW GROUND SURFACE
Former Crease and Cook Tannery
Danvers, Massachusetts

CAS Number (if available)					7439-97-6	57-12-5	57-12-5	1746-01-6	40321-76-4
Sample ID	Sample Date	Sample Depth Interval (ft bgs)		Area	Mercury	Cyanide	PAC Cyanide	2,3,7,8-TCDD	1,2,3,7,8-PeCDD
		Top	Bottom		(mg/kg)	(mg/kg)	(mg/kg)	(pg/g)	(pg/g)
Lagoon 1 Top	9/10/1986	0	0.5	Area C - Site Wide Arsenic	0.01 U	--	--	--	--
SS-1	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-2	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-3	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-4	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-5	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-6	7/21/1995	0	0.3	Area C	--	--	--	--	--
C-1	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-2	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-3	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-4	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-5	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-6	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-7	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-8	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-9	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-10	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-11	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-12	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-13	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-14	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-15	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-16	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-17	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-18	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-19	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-20	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-21	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-22	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-23	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-24	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-25	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
BS-1	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-2	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-3	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-4	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-5	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
HB-14	5/13/1996	0	1	Area C	--	--	--	--	--
HB-51	5/13/1996	0	1	Area C	--	--	--	--	--
HB-56	5/15/1996	0	1	Area C	--	--	--	--	--
HB-58	5/13/1996	0	1	Area C	--	--	--	--	--
HB-61	5/13/1996	0	1	Area C	--	--	--	--	--
HB-62	5/13/1996	0	1	Area C	--	--	--	--	--
HB-83	5/13/1996	0	1	Area C	--	--	--	--	--
HB-85	5/13/1996	0	1	Area C	--	--	--	--	--
HB-89	5/13/1996	0	1	Area C	--	--	--	--	--
HB-98	5/15/1996	0	1	Area C	--	--	--	--	--
HB-103	5/13/1996	0	1	Area C	--	--	--	--	--

TABLE 3
SUMMARY OF SOIL DATA
ZERO TO ONE FOOT BELOW GROUND SURFACE
Former Crease and Cook Tannery
Danvers, Massachusetts

CAS Number (if available)					7439-97-6	57-12-5	57-12-5	1746-01-6	40321-76-4
Sample ID	Sample Date	Sample Depth Interval (ft bgs) Top	Bottom	Area	Mercury (mg/kg)	Cyanide (mg/kg)	PAC Cyanide (mg/kg)	2,3,7,8-TCDD (pg/g)	1,2,3,7,8-PeCDD (pg/g)
WC-1	11/21/2006	0	1	Landfill Area A	--	0.63 U	--	17.2	39.7
WC-2	11/21/2006	0	1	Landfill Area A	--	0.61 U	--	--	--
WC-3	11/21/2006	0	1	Landfill Area A	--	0.53 U	--	26.0	37.2
WC-4	11/21/2006	0	1	Landfill Area A	--	0.47 U	0.49 U	--	--
WC-5	11/21/2006	0	1	Landfill Area A	--	0.59 U	--	7.15	14.8
WC-6	11/21/2006	0	1	Landfill Area A	--	0.53 U	--	--	--
WC-7	11/21/2006	0	1	Landfill Area A	--	0.49 U	--	3.39	11.5
WC-8	11/21/2006	0	1	Landfill Area A	--	0.60 U	0.58 U	--	--
WC-9	11/21/2006	0	1	Landfill Area A	--	0.55 U	--	4.31	11.7
WC-10	11/21/2006	0	1	Landfill Area A	--	0.69 U	--	--	--
WC-11	11/21/2006	0	1	Landfill Area A	--	0.61 U	--	0.54 A	6.28
WC-12	11/21/2006	0	1	Landfill Area A	--	0.55 U	0.58 U	--	--
WC-13	11/21/2006	0	1	Landfill Area B	--	0.55 U	--	5.68	6.86
WC-14	11/21/2006	0	1	Landfill Area B	--	0.56 U	--	--	--
WC-15	11/21/2006	0	1	Landfill Area B	--	0.53 U	--	4.40	11.0
WC-16	11/21/2006	0	1	Landfill Area B	--	0.56 U	0.60 U	--	--
WC-17	11/22/2006	0	1	Lagoon Area C	--	0.54 U	--	0.469 A	7.41
WC-18	11/22/2006	0	1	Lagoon Area C	--	0.54 U	--	--	--
WC-19	11/22/2006	0	1	Lagoon Area C	--	0.52 U	--	0.170 A [5]	1.89 A
WC-20	11/22/2006	0	1	Lagoon Area C	--	0.58 U	0.58 U	--	--
WC-21	11/22/2006	0	1	Lagoon Area C	--	0.63 U	--	0.542 A	0.965 a [5]
WC-22	11/22/2006	0	1	Lagoon Area C	--	0.55 U	--	--	--
WC-23 [3]	11/22/2006	0	1	Lagoon Area C	--	0.61 U	--	0.185 A [5]	0.932 A [5]
WC-24	11/22/2006	0	1	Lagoon Area C	--	0.50 U	0.51 U	--	--
WC-25	11/22/2006	0	1	Lagoon Area C	--	0.54 U	--	0.989	10.4 [5]
WC-26	11/22/2006	0	1	Lagoon Area C	--	0.62 U	--	--	--
WC-27	11/22/2006	0	1	Lagoon Area C	--	0.57 U	--	0.455 A	2.94 A
WC-28	11/22/2006	0	1	Lagoon Area C	--	0.60 U	0.59 U	--	--
WC-41	11/21/2006	0	1	Uplands	--	0.84	--	26.6	23.1 A
WC-42	11/21/2006	0	1	Uplands	--	0.50 U	--	0.127 U	0.286 A [5]
WC-43	11/21/2006	0	1	Uplands	--	0.55 U	0.55 U	0.257 A [5]	0.463 A [5]
Number of Samples					1	31	8	17	17
Number of Detections					0	1	0	16	17
Arithmetic Mean Concentration [4]					ND	0.300	ND	6.14	11.7
Minimum Detected Concentration					ND	0.840	ND	0.170	0.286
Maximum Detected Concentration					ND	0.840	ND	26.6	39.7
Location of Maximum Detected Concentration					--	WC-41	--	WC-41	WC-1
Imminent Hazard Screening Criteria [1]					300	NE	100	NE	NE

TABLE 3
SUMMARY OF SOIL DATA
ZERO TO ONE FOOT BELOW GROUND SURFACE
Former Crease and Cook Tannery
Danvers, Massachusetts

CAS Number (if available)					39227-28-6	57653-85-7	19408-74-3	51207-31-9	57117-41-6
Sample ID	Sample Date	Sample Depth Interval (ft bgs)		Area	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF
		Top	Bottom		(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)
Lagoon 1 Top	9/10/1986	0	0.5	Area C - Site Wide Arsenic	--	--	--	--	--
SS-1	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-2	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-3	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-4	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-5	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-6	7/21/1995	0	0.3	Area C	--	--	--	--	--
C-1	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-2	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-3	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-4	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-5	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-6	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-7	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-8	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-9	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-10	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-11	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-12	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-13	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-14	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-15	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-16	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-17	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-18	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-19	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-20	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-21	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-22	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-23	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-24	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-25	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
BS-1	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-2	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-3	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-4	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-5	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
HB-14	5/13/1996	0	1	Area C	--	--	--	--	--
HB-51	5/13/1996	0	1	Area C	--	--	--	--	--
HB-56	5/15/1996	0	1	Area C	--	--	--	--	--
HB-58	5/13/1996	0	1	Area C	--	--	--	--	--
HB-61	5/13/1996	0	1	Area C	--	--	--	--	--
HB-62	5/13/1996	0	1	Area C	--	--	--	--	--
HB-83	5/13/1996	0	1	Area C	--	--	--	--	--
HB-85	5/13/1996	0	1	Area C	--	--	--	--	--
HB-89	5/13/1996	0	1	Area C	--	--	--	--	--
HB-98	5/15/1996	0	1	Area C	--	--	--	--	--
HB-103	5/13/1996	0	1	Area C	--	--	--	--	--

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SUMMARY OF SOIL DATA
ZERO TO ONE FOOT BELOW GROUND SURFACE
Former Crease and Cook Tannery
Danvers, Massachusetts

CAS Number (if available)					39227-28-6	57653-85-7	19408-74-3	51207-31-9	57117-41-6
Sample ID	Sample Date	Sample Depth Interval (ft bgs) Top	Bottom	Area	1,2,3,4,7,8-HxCDD (pg/g)	1,2,3,6,7,8-HxCDD (pg/g)	1,2,3,7,8,9-HxCDD (pg/g)	2,3,7,8-TCDF (pg/g)	1,2,3,7,8-PeCDF (pg/g)
WC-1	11/21/2006	0	1	Landfill Area A	84.8	1430	304	4.20 [7]	3.52 A
WC-2	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-3	11/21/2006	0	1	Landfill Area A	126	1330	292	3.70 [7]	3.40 A [6]
WC-4	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-5	11/21/2006	0	1	Landfill Area A	39.3	464	107	1.50	2.31 A [6]
WC-6	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-7	11/21/2006	0	1	Landfill Area A	21.2	348	69.9	1.33 [7]	3.39 A
WC-8	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-9	11/21/2006	0	1	Landfill Area A	21.7	272	72.0	1.56	2.05 A
WC-10	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-11	11/21/2006	0	1	Landfill Area A	10.6 [5]	155	38.3	1.61 [7]	1.29 A [5]
WC-12	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-13	11/21/2006	0	1	Landfill Area B	23.2	353	82.6	1.06	2.10 A
WC-14	11/21/2006	0	1	Landfill Area B	--	--	--	--	--
WC-15	11/21/2006	0	1	Landfill Area B	24.2	157	63.0	0.619 A	0.933 A
WC-16	11/21/2006	0	1	Landfill Area B	--	--	--	--	--
WC-17	11/22/2006	0	1	Lagoon Area C	8.83 [5]	121	38.1	0.587 A	0.331 A
WC-18	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-19	11/22/2006	0	1	Lagoon Area C	1.49 A	36.9	8.55	0.138 U	0.138 A
WC-20	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-21	11/22/2006	0	1	Lagoon Area C	1.43 A [5]	4.01 A	2.95 A	1.50 [7]	0.889 A
WC-22	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-23	11/22/2006	0	1	Lagoon Area C	0.97 A	9.16	3.12 A	0.74 A	0.370 A
WC-24	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-25	11/22/2006	0	1	Lagoon Area C	10.7	246	59.6	0.771 A	0.726 A [6]
WC-26	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-27	11/22/2006	0	1	Lagoon Area C	1.76 A [5]	21.4	8.65	0.818 A	0.511 A
WC-28	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-41	11/21/2006	0	1	Uplands	109	2110	411	3.47 A	3.50 A
WC-42	11/21/2006	0	1	Uplands	0.607 A	4.32	2.59 A	0.249 A	0.111 A
WC-43	11/21/2006	0	1	Uplands	0.564 A	2.27 A	1.29 A	0.951 [7]	0.387 A [6]
Number of Samples					17	17	17	17	17
Number of Detections					17	17	17	16	17
Arithmetic Mean Concentration [a]					30.3	441	97.9	1.50	1.60
Minimum Detected Concentration					0.564	2.27	1.29	0.249	0.111
Maximum Detected Concentration					126	2110	411	4.20	3.52
Location of Maximum Detected Concentration					WC-3	WC-41	WC-41	WC-1	WC-1
Imminent Hazard Screening Criteria [1]					NE	NE	NE	NE	NE

TABLE 3
SUMMARY OF SOIL DATA
ZERO TO ONE FOOT BELOW GROUND SURFACE
Former Crease and Cook Tannery
Danvers, Massachusetts

CAS Number (if available)					57117-31-4				
Sample ID	Sample Date	Sample Depth Interval (ft bgs)		Area	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF
		Top	Bottom		(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)
Lagoon 1 Top	9/10/1986	0	0.5	Area C - Site Wide Arsenic	--	--	--	--	--
SS-1	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-2	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-3	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-4	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-5	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-6	7/21/1995	0	0.3	Area C	--	--	--	--	--
C-1	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-2	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-3	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-4	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-5	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-6	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-7	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-8	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-9	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-10	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-11	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-12	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-13	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-14	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-15	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-16	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-17	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-18	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-19	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-20	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-21	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-22	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-23	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-24	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-25	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
BS-1	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-2	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-3	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-4	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-5	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
HB-14	5/13/1996	0	1	Area C	--	--	--	--	--
HB-51	5/13/1996	0	1	Area C	--	--	--	--	--
HB-56	5/15/1996	0	1	Area C	--	--	--	--	--
HB-58	5/13/1996	0	1	Area C	--	--	--	--	--
HB-61	5/13/1996	0	1	Area C	--	--	--	--	--
HB-62	5/13/1996	0	1	Area C	--	--	--	--	--
HB-83	5/13/1996	0	1	Area C	--	--	--	--	--
HB-85	5/13/1996	0	1	Area C	--	--	--	--	--
HB-89	5/13/1996	0	1	Area C	--	--	--	--	--
HB-98	5/15/1996	0	1	Area C	--	--	--	--	--
HB-103	5/13/1996	0	1	Area C	--	--	--	--	--

TABLE 3
SUMMARY OF SOIL DATA
ZERO TO ONE FOOT BELOW GROUND SURFACE
Former Crease and Cook Tannery
Danvers, Massachusetts

CAS Number (if available)					57117-31-4				
Sample ID	Sample Date	Sample Depth Interval (ft bgs) Top	Bottom	Area	2,3,4,7,8-PeCDF (pg/g)	1,2,3,4,7,8-HxCDF (pg/g)	1,2,3,6,7,8-HxCDF (pg/g)	2,3,4,6,7,8-HxCDF (pg/g)	1,2,3,7,8,9-HxCDF (pg/g)
WC-1	11/21/2006	0	1	Landfill Area A	16.2	120	50.1	454	14.3
WC-2	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-3	11/21/2006	0	1	Landfill Area A	12.0	102	43.6 [6]	321	13.7
WC-4	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-5	11/21/2006	0	1	Landfill Area A	6.85	42.1	25.2	102	7.21
WC-6	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-7	11/21/2006	0	1	Landfill Area A	7.49	28.8	17.8	54.4	5.73
WC-8	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-9	11/21/2006	0	1	Landfill Area A	4.69 A	25.7	16.8	67.1	3.75 A
WC-10	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-11	11/21/2006	0	1	Landfill Area A	4.23 A	15.2	8.68	41.9	2.52 A [5]
WC-12	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-13	11/21/2006	0	1	Landfill Area B	4.59	32.6	12.3	50.2	5.10
WC-14	11/21/2006	0	1	Landfill Area B	--	--	--	--	--
WC-15	11/21/2006	0	1	Landfill Area B	2.87 A	10.6	7.60	37.8	1.90 A
WC-16	11/21/2006	0	1	Landfill Area B	--	--	--	--	--
WC-17	11/22/2006	0	1	Lagoon Area C	0.812 A	3.68 A	2.58 A	10.3	0.511 A
WC-18	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-19	11/22/2006	0	1	Lagoon Area C	0.295 A	1.17 A	0.769 A [5]	2.27 A	0.235 A
WC-20	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-21	11/22/2006	0	1	Lagoon Area C	1.15 A	2.41 A	1.28 A	1.65 A	0.555 A
WC-22	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-23 *	11/22/2006	0	1	Lagoon Area C	0.51 A [5]	0.86 A	0.62 A	1.30 A	0.486 U
WC-24	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-25	11/22/2006	0	1	Lagoon Area C	1.95 A	8.56	6.06	22.3	1.22 A
WC-26	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-27	11/22/2006	0	1	Lagoon Area C	0.565 A	0.737 A [5]	0.617 A [5]	0.691 A [5]	0.518 U
WC-28	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-41	11/21/2006	0	1	Uplands	13.2 A	84.1	37.6 A	188	10.0 A
WC-42	11/21/2006	0	1	Uplands	0.304 A	0.443 A	1.42 A	0.830 A	0.391 U
WC-43	11/21/2006	0	1	Uplands	3.76 A	1.57 A	1.39 A	2.67 A	0.325 A [5]
Number of Samples					17	17	17	17	17
Number of Detections					17	17	17	17	14
Arithmetic Mean Concentration [4]					5.06	30.0	14.6	84.8	4.22
Minimum Detected Concentration					0.295	0.443	0.617	0.691	0.235
Maximum Detected Concentration					16.2	120	50.1	454	14.3
Location of Maximum Detected Concentration					WC-1	WC-1	WC-1	WC-1	WC-1
Imminent Hazard Screening Criteria [7]					NE	NE	NE	NE	NE

TABLE 3
SUMMARY OF SOIL DATA
ZERO TO ONE FOOT BELOW GROUND SURFACE
Former Crease and Cook Tannery
Danvers, Massachusetts

CAS Number (if available)								3582-46-9	
Sample ID	Sample Date	Sample Depth Interval (ft bgs) Top	Bottom	Area	1,2,3,4,7,8-HpCDF (pg/g)	1,2,3,4,7,8,9-HpCDF (pg/g)	OCDF (pg/g)	1,2,3,4,6,7,8-HpCDD (pg/g)	OCDD (pg/g)
Lagoon 1 Top	9/10/1986	0	0.5	Area C - Site Wide Arsenic	--	--	--	--	--
SS-1	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-2	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-3	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-4	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-5	7/21/1995	0	0.3	Area C	--	--	--	--	--
SS-6	7/21/1995	0	0.3	Area C	--	--	--	--	--
C-1	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-2	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-3	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-4	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-5	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-6	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-7	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-8	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-9	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-10	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-11	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-12	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-13	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-14	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-15	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-16	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-17	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-18	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-19	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-20	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-21	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-22	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-23	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-24	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
C-25	8/30/1995	0.2	0.5	Area C	--	--	--	--	--
BS-1	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-2	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-3	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-4	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
BS-5	8/30/1995	0.2	0.5	Unknown	--	--	--	--	--
HB-14	5/13/1996	0	1	Area C	--	--	--	--	--
HB-51	5/13/1996	0	1	Area C	--	--	--	--	--
HB-56	5/15/1996	0	1	Area C	--	--	--	--	--
HB-58	5/13/1996	0	1	Area C	--	--	--	--	--
HB-61	5/13/1996	0	1	Area C	--	--	--	--	--
HB-62	5/13/1996	0	1	Area C	--	--	--	--	--
HB-83	5/13/1996	0	1	Area C	--	--	--	--	--
HB-85	5/13/1996	0	1	Area C	--	--	--	--	--
HB-89	5/13/1996	0	1	Area C	--	--	--	--	--
HB-98	5/15/1996	0	1	Area C	--	--	--	--	--
HB-103	5/13/1996	0	1	Area C	--	--	--	--	--

TABLE 3
SUMMARY OF SOIL DATA
ZERO TO ONE FOOT BELOW GROUND SURFACE
Former Crease and Cook Tannery
Danvers, Massachusetts

CAS Number (if available)								3582-46-9	
Sample ID	Sample Date	Sample Depth Interval (ft bgs) Top	Bottom	Area	1,2,3,4,7,8-HpCDF (pg/g)	1,2,3,4,7,8,9-HpCDF (pg/g)	OCDF (pg/g)	1,2,3,4,6,7,8-HpCDD (pg/g)	OCDD (pg/g)
WC-1	11/21/2006	0	1	Landfill Area A	7010	142 A	30400	53400	502000 E
WC-2	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-3	11/21/2006	0	1	Landfill Area A	6760	146 A	24300	62500	683000 E
WC-4	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-5	11/21/2006	0	1	Landfill Area A	3350	109 A	11800	18800	218000 E
WC-6	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-7	11/21/2006	0	1	Landfill Area A	1280	55.1	4230	12800	136000 E
WC-8	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-9	11/21/2006	0	1	Landfill Area A	1490	53.3	4400	9530	98900 E
WC-10	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-11	11/21/2006	0	1	Landfill Area A	1200	27.3	2470	4180 E	39500 E
WC-12	11/21/2006	0	1	Landfill Area A	--	--	--	--	--
WC-13	11/21/2006	0	1	Landfill Area B	776	33.1	1100	15200	158000
WC-14	11/21/2006	0	1	Landfill Area B	--	--	--	--	--
WC-15	11/21/2006	0	1	Landfill Area B	319	16.7	306	6190	70700
WC-16	11/21/2006	0	1	Landfill Area B	--	--	--	--	--
WC-17	11/22/2006	0	1	Lagoon Area C	259	9.73	374	4860	45300 E
WC-18	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-19	11/22/2006	0	1	Lagoon Area C	69.1	3.93 A	173	1050	13000 E
WC-20	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-21	11/22/2006	0	1	Lagoon Area C	25.4	1.74 A [5]	92.6	216	9230 E
WC-22	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-23 [3]	11/22/2006	0	1	Lagoon Area C	27.5	1.68 A [5]	76.8	335	5615 E
WC-24	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-25	11/22/2006	0	1	Lagoon Area C	537	25.1	826	7630	94400 E
WC-26	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-27	11/22/2006	0	1	Lagoon Area C	10.4	0.613 U	20.1	239	9730 E
WC-28	11/22/2006	0	1	Lagoon Area C	--	--	--	--	--
WC-41	11/21/2006	0	1	Uplands	3980	97.5	9850	94200	1180000 E
WC-42	11/21/2006	0	1	Uplands	9.41	0.456 A	15.6	148	1800
WC-43	11/21/2006	0	1	Uplands	11.4	0.453 A [5]	12.8	75.7	2040
Number of Samples					17	17	17	17	17
Number of Detections					17	16	17	17	17
Arithmetic Mean Concentration [4]					1693	45.1	5651	18189	203850
Minimum Detected Concentration					9.41	0.453	12.8	75.7	1800
Maximum Detected Concentration					7010	146	30400	94200	1180000
Location of Maximum Detected Concentration					WC-1	WC-3	WC-1	WC-41	WC-41
Imminent Hazard Screening Criteria [6]					NE	NE	NE	NE	NE

Table 3, Continued
Summary of Soil Data

Former Creese & Cook Disposal Site
25 Clinton Avenue
Danvers, Massachusetts

Notes:
ft bgs = feet below ground surface
mg/kg = milligrams per kilogram.
pg/g = picograms per gram.
XRF = x-ray fluorescence
"–" = not analyzed.
NE = not established.
[a] = Non-detected values assumed present at one-half the quantitation limit.
1. MCP 310 CMR 40.0321(2)(b)
2. Values greater than Imminent Hazard Screening Criteria are highlighted.
3. Laboratory data.
4. XRF data.
5. Estimated Maximum Possible Concentration
6. DPE = Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s).
7. Maximum value among initial run and diluted analysis applied.
8. Average among WC-23 and WC-101 (duplicate of WC-23) applied to assessment.

A = Amount detected is less than the Lower Calibration Limit.
U = Not detected at the presented laboratory reporting limit.
Q = Indicates the presence of a quantitative interference. This situation generally results in an underestimation of the affected analytes.
E = Amount detected is greater than the Upper Calibration Limit.

TABLE 4
SUMMARY OF SEDIMENT DATA
Former Creese and Cook Tannery
25 Clinton Avenue
Danvers, Massachusetts

CAS Number (if available)				7440-38-2	7440-43-9	7440-47-3	18540-29-9	7440-50-8
Sample ID	Sample Date	Sample Depth (ft bgs)	Sample Area	Arsenic (mg/kg)	Cadmium (lab data) (mg/kg)	Total Chromium (mg/kg)	Hexavalent Chromium (lab data) (mg/kg)	Copper (mg/kg)
HBTF-1	5/20/1996	0.5 - 1.5	Tidal Flats	15.2 [4]	--	86 [4]	--	--
HBTF-2	5/20/1996	0.5 - 1.5	Tidal Flats	42.2 [4]	--	1370 [4]	--	--
HBTF-3	5/20/1996	0.5 - 1.5	Tidal Flats	51.9 [4]	--	1140 [4]	--	--
HBTF-4	5/20/1996	0.5 - 1.5	Tidal Flats	31.3 [4]	--	599 [4]	--	--
HBTF-5	5/20/1996	0.5 - 1.5	Tidal Flats	150 [4]	--	5390 [4]	--	--
HBTF-6	5/20/1996	0.5 - 1.5	Tidal Flats	150 [4]	--	1600 [4]	--	--
HBTF-7	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	66.3 [4]	--	3330 [4]	--	--
HBTF-8	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	119 [4]	--	3800 [4]	--	--
HBTF-9	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	98.7 [4]	--	3130 [4]	--	--
HBTF-10	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	111 [4]	--	2340 [4]	--	--
HBTF-11	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	15.1 [4]	--	59.4 [4]	--	--
HBTF-12	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	15.0 [4]	--	70.5 [4]	--	--
[1] Marsh-1	April 2005	0 - 1.5	Salt Marsh Area A	184 [4]	--	--	--	--
[1] Marsh-2	April 2005	0 - 1.5	Salt Marsh Area A	553 [4]	--	--	--	--
[1] Marsh-3	April 2005	0 - 1.5	Salt Marsh Area A	35.2 [4]	--	--	--	--
[1] Marsh-4	April 2005	0 - 1.5	Salt Marsh Area A	31.7 [4]	--	--	--	--
[1] Marsh-5	April 2005	0 - 1.5	Salt Marsh Area A	279 [4]	--	--	--	--
[1] Marsh-6	April 2005	0 - 1.5	Salt Marsh Area A	34 [4]	--	--	--	--
[1] Marsh-11	April 2005	0 - 1.5	Salt Marsh Area A	173 [4]	--	--	--	--
[1] Marsh-12	April 2005	0 - 1.5	Salt Marsh Area A	45.1 [4]	--	--	--	--
[1] Marsh-7	April 2005	0 - 1.5	Salt Marsh Area B	65.7 [4]	--	--	--	--
[1] Marsh-8	April 2005	0 - 1.5	Salt Marsh Area B	79.5 [4]	--	--	--	--
[1] Marsh-9	April 2005	0 - 1.5	Salt Marsh Area B	66.2 [4]	--	--	--	--
[1] Marsh-10	April 2005	0 - 1.5	Salt Marsh Area B	50 [4]	--	--	--	--
[1] Mud Flat-1	April 2005	0 - 1.5	Mud Flats	15.1 [4]	--	--	--	--
[1] Mud Flat-3	April 2005	0 - 1.5	Mud Flats	12.6 [4]	--	--	--	--
[1] Mud Flat-4	April 2005	0 - 1.5	Mud Flats	41.2 [4]	--	--	--	--
[1] Mud Flat-5	April 2005	0 - 1.5	Mud Flats	105 [4]	--	--	--	--
[1] Mud Flat-6	April 2005	0 - 1.5	Mud Flats	50.9 [4]	--	--	--	--
[1] Mud Flat-7	April 2005	0 - 1.5	Mud Flats	27.1 [4]	--	--	--	--
[1] Dup-1 (Mud Flat-7)	April 2005	0 - 1.5	Mud Flats	31.5 [4]	--	--	--	--
[3] RR Bridge	May-84		Railroad Bridge	16.05 [4]	1.186	164.2 [4]	--	33.59
[3] Steam Bridge	May-84		Steam Bridge	6,102 [4]	0.578	77.09 [4]	--	13.14

TABLE 4
SUMMARY OF SEDIMENT DATA
Former Creese and Cook Tannery
25 Clinton Avenue
Danvers, Massachusetts

CAS Number (if available)				7440-38-2	7440-43-9	7440-47-3	18540-29-9	7440-50-8
Sample ID	Sample Date	Sample Depth (ft bgs)	Sample Area	Arsenic (mg/kg)	Cadmium (lab data) (mg/kg)	Total Chromium (mg/kg)	Hexavalent Chromium (lab data) (mg/kg)	Copper (mg/kg)
WC-SED-1	11/22/06	0 - 0.5	Crane River - salt marsh	99 [5]	--	399 [5]	7.7 U	--
WC-SED-2	11/22/06	0 - 0.5	Crane River - salt marsh	47 [5]	--	309 [5]	7.3 U	--
WC-SED-3	11/22/06	0 - 0.5	Crane River - mud flats	7 U [5]	--	91.9 [4]	3.8 U	--
WC-SED-4	11/22/06	0 - 0.5	Crane River - salt marsh	16 [5]	--	174 [5]	10 U	--
WC-SED-5	11/22/06	0 - 0.5	Crane River - salt marsh	12 [5]	--	125 U [5]	8.2 U	--
WC-SED-6	11/22/06	0 - 0.5	Crane River - salt marsh	18 [5]	--	916 [4]	4.7 U	--
WC-SED-7	11/22/06	0 - 0.5	Crane River - mud flats	12 U [5]	--	408 [5]	3.9	--
WC-SED-8	11/22/06	0 - 0.5	Crane River - salt marsh	28 [5]	--	211 [5]	3.9 U	--
WC-SED-9	11/22/06	0 - 0.5	Crane River - mud flats	19 [5]	--	1710 [4]	4.8	--
WC-SED-10	11/22/06	0 - 0.5	Crane River - salt marsh	15 [5]	--	581 [5]	6.3 U	--
WC-SED-11	11/22/06	0 - 0.5	Crane River - mud flats	14 U [5]	--	555 [5]	4.6	--
WC-SED-12	11/22/06	0 - 0.5	Crane River - salt marsh	13 U [5]	--	272 [5]	8.7 U	--
WC-SED-13	11/22/06	0 - 0.5	Crane River - mud flats	14 [5]	--	512 [4]	3.6 U	--
WC-SED-14	11/21/06	0 - 0.5	Crane River - salt marsh	13 U [5]	--	335 [5]	6.7 U	--
WC-SED-15	11/21/06	0 - 0.5	Crane River - salt marsh	59 [5]	--	906 [5]	3.3 U	--
WC-SED-16	11/21/06	0 - 0.5	Crane River - salt marsh	73 [5]	--	1320 [4]	114	--
WC-SED-17	11/22/06	0 - 0.5	Crane River - mud flats	8 U [5]	--	120 U [5]	3.8 U	--
WC-SED-18	11/21/06	0 - 0.5	Crane River - salt marsh	18 [5]	--	445 [4]	11 U	--
WC-SED-19	11/22/06	0 - 0.5	Crane River - mud flats	17 U [5]	--	216 U [5]	2.8 U	--
WC-SED-20	11/21/06	0 - 0.5	Crane River - salt marsh	51 [5]	--	682 [5]	19.9	--
Number of Samples				53	2	34	20	2
Number of Detections				46	2	31	5	2
Arithmetic Mean Concentration [6]				61.9	0.882	977	9.66	23.4
Minimum Detected Concentration				6.10	0.578	59.4	3.90	13.1
Maximum Detected Concentration				553	1.19	5390	114	33.6
Location of Maximum Detected Concentration				Marsh-2	RR Bridge	HBTF-5	WC-SED-16	RR Bridge

Footnotes:
ft bgs = feet below ground surface
mg/kg = milligrams per kilogram.
pg/g = picograms per gram.
XRF = x-ray fluorescence
"--" = not analyzed.
[s] = Non-detected values assumed present at one-half the quantitation limit.
1. Data transcribed from Table 3 within the June 6, 2005 Limited Assessment report prepared by Geologic Field Services, Inc. (GFS).
2. Data transcribed from Table 10 within the October 3, 1996 Final Site Inspection Prioritization Report prepared by Stone & Webster Environmental Technology & Services (prepared for the United States Environmental Protection Agency - New England Office of Site Remediation and Restoration.
3. Data transcribed from the River Sediment Analysis summary table within the May 1984 Engineering Report for Danversport Tanning Co. prepared by SP, Inc.
4. Laboratory data.
5. XRF data.
6. Estimated Maximum Possible Concentration
7. Maximum value among initial run and diluted analysis applied.
A = Amount detected is less than the Lower Calibration Limit.
U = Not detected at the presented laboratory reporting limit.
Q = Indicates the presence of a quantitative interference.
This situation generally results in an underestimation of the affected analytes.
E = Amount detected is greater than the Upper Calibration Limit.

TABLE 4
SUMMARY OF SEDIMENT DATA
Former Creese and Cook Tannery
25 Clinton Avenue
Danvers, Massachusetts

CAS Number (if available)				57-12-5	57-12-5	7439-92-1	7439-97-6	7440-02-0	7440-66-6
Sample ID	Sample Date	Sample Depth (ft bgs)	Sample Area	Cyanide (lab data) (mg/kg)	PAC Cyanide (mg/kg)	Lead (mg/kg)	Mercury (lab data) (mg/kg)	Nickel (lab data) (mg/kg)	Zinc (lab data) (mg/kg)
HBTF-1	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-2	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-3	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-4	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-5	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-6	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-7	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-8	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-9	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-10	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-11	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-12	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
[1] Marsh-1	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-2	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-3	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-4	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-5	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-6	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-11	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-12	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-7	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--	--
[1] Marsh-8	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--	--
[1] Marsh-9	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--	--
[1] Marsh-10	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--	--
[1] Mud Flat-1	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Mud Flat-3	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Mud Flat-4	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Mud Flat-5	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Mud Flat-6	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Mud Flat-7	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Dup-1 (Mud Flat-7)	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[3] RR Bridge	May-84		Railroad Bridge	--	--	119.4 [4]	5.405	12.75	140.4
[3] Steam Bridge	May-84		Steam Bridge	--	--	66.54 [4]	2.094	5.625	133.2

TABLE 4
SUMMARY OF SEDIMENT DATA
Former Creese and Cook Tannery
25 Clinton Avenue
Danvers, Massachusetts

CAS Number (if available)				57-12-5	57-12-5	7439-92-1	7439-97-6	7440-02-0	7440-66-6
Sample ID	Sample Date	Sample Depth (ft bgs)	Sample Area	Cyanide (lab data) (mg/kg)	PAC Cyanide (mg/kg)	Lead (mg/kg)	Mercury (lab data) (mg/kg)	Nickel (lab data) (mg/kg)	Zinc (lab data) (mg/kg)
WC-SED-1	11/22/06	0 - 0.5	Crane River - salt marsh	1 U	--	76 [5]	--	--	--
WC-SED-2	11/22/06	0 - 0.5	Crane River - salt marsh	0.68 U	--	84 [5]	--	--	--
WC-SED-3	11/22/06	0 - 0.5	Crane River - mud flats	0.45 U	--	19 [5]	--	--	--
WC-SED-4	11/22/06	0 - 0.5	Crane River - salt marsh	1.1 U	1.1 U	62 [5]	--	--	--
WC-SED-5	11/22/06	0 - 0.5	Crane River - salt marsh	0.94 U	--	63 [5]	--	--	--
WC-SED-6	11/22/06	0 - 0.5	Crane River - salt marsh	0.54 U	--	83 [5]	--	--	--
WC-SED-7	11/22/06	0 - 0.5	Crane River - mud flats	0.62 U	--	73 [5]	--	--	--
WC-SED-8	11/22/06	0 - 0.5	Crane River - salt marsh	0.68 U	0.71 U	82 [5]	--	--	--
WC-SED-9	11/22/06	0 - 0.5	Crane River - mud flats	0.73 U	--	107 [5]	--	--	--
WC-SED-10	11/22/06	0 - 0.5	Crane River - salt marsh	0.79 U	--	63 [5]	--	--	--
WC-SED-11	11/22/06	0 - 0.5	Crane River - mud flats	0.63 U	--	75 [5]	--	--	--
WC-SED-12	11/22/06	0 - 0.5	Crane River - salt marsh	0.89 U	0.92 U	51 [5]	--	--	--
WC-SED-13	11/22/06	0 - 0.5	Crane River - mud flats	0.77 U	--	20 [5]	--	--	--
WC-SED-14	11/21/06	0 - 0.5	Crane River - salt marsh	0.85 U	--	54 [5]	--	--	--
WC-SED-15	11/21/06	0 - 0.5	Crane River - salt marsh	0.5 U	--	78 [5]	--	--	--
WC-SED-16	11/21/06	0 - 0.5	Crane River - salt marsh	0.54 U	0.55 U	95 [5]	--	--	--
WC-SED-17	11/22/06	0 - 0.5	Crane River - mud flats	0.55 U	--	17 [5]	--	--	--
WC-SED-18	11/21/06	0 - 0.5	Crane River - salt marsh	1.3 U	--	34 [5]	--	--	--
WC-SED-19	11/22/06	0 - 0.5	Crane River - mud flats	0.59 U	--	47 [5]	--	--	--
WC-SED-20	11/21/06	0 - 0.5	Crane River - salt marsh	0.61 U	0.45 U	50 [5]	--	--	--
Number of Samples				20	5	22	2	2	2
Number of Detections				0	0	22	2	2	2
Arithmetic Mean Concentration [a]				ND	ND	64.5	3.75	9.19	137
Minimum Detected Concentration				ND	ND	17.0	2.09	5.63	133
Maximum Detected Concentration				ND	ND	119	5.41	12.8	140
Location of Maximum Detected Concentration				--	--	RR Bridge	RR Bridge	RR Bridge	RR Bridge

Footnotes:
ft bgs = feet below ground surface
mg/kg = milligrams per kilogram.
pg/g = picograms per gram.
XRF = x-ray fluorescence
"--" = not analyzed.
[a] = Non-detected values assumed present at one-half the quantitation limit.
1. Data transcribed from Table 3 within the June 6, 2005 Limited Assessment report prepared by Geologic Field Services, Inc. (GFS).
2. Data transcribed from Table 10 within the October 3, 1996 Final Site Inspection Prioritization Report prepared by Stone & Webster Environmental Technology & Services (prepared for the United States Environmental Protection Agency - New England Office of Site Remediation and Restoration.
3. Data transcribed from the River Sediment Analysis summary table within the May 1984 Engineering Report for Danversport Tanning Co. prepared by SP, Inc.
4. Laboratory data.
5. XRF data.
6. Estimated Maximum Possible Concentration
7. Maximum value among initial run and diluted analysis applied.
A = Amount detected is less than the Lower Calibration Limit.
U = Not detected at the presented laboratory reporting limit.
Q = Indicates the presence of a quantitative interference.
This situation generally results in an underestimation of the affected analytes.
E = Amount detected is greater than the Upper Calibration Limit.

TABLE 4
SUMMARY OF SEDIMENT DATA
Former Creese and Cook Tannery
25 Clinton Avenue
Danvers, Massachusetts

CAS Number (if available)				1746-01-6	40321-76-4	39227-28-6	57653-85-7	19408-74-3	51207-31-9
Sample ID	Sample Date	Sample Depth (ft bgs)	Sample Area	2,3,7,8-TCDD (pg/g)	1,2,3,7,8-PeCDD (pg/g)	1,2,3,4,7,8-HxCDD (pg/g)	1,2,3,6,7,8-HxCDD (pg/g)	1,2,3,7,8,9-HxCDD (pg/g)	2,3,7,8-TCDF (pg/g)
HBTF-1	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-2	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-3	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-4	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-5	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-6	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-7	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-8	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-9	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-10	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-11	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-12	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
[1] Marsh-1	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-2	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-3	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-4	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-5	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-6	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-11	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-12	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-7	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--	--
[1] Marsh-8	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--	--
[1] Marsh-9	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--	--
[1] Marsh-10	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--	--
[1] Mud Flat-1	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Mud Flat-3	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Mud Flat-4	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Mud Flat-5	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Mud Flat-6	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Mud Flat-7	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Dup-1 (Mud Flat-7)	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[3] RR Bridge	May-84		Railroad Bridge	--	--	--	--	--	--
[3] Steam Bridge	May-84		Steam Bridge	--	--	--	--	--	--

TABLE 4
SUMMARY OF SEDIMENT DATA
Former Creese and Cook Tannery
25 Clinton Avenue
Danvers, Massachusetts

CAS Number (if available)				1746-01-6	40321-76-4	39227-28-6	57653-85-7	19408-74-3	51207-31-9
Sample ID	Sample Date	Sample Depth (ft bgs)	Sample Area	2,3,7,8-TCDD (pg/g)	1,2,3,7,8-PeCDD (pg/g)	1,2,3,4,7,8-HxCDD (pg/g)	1,2,3,6,7,8-HxCDD (pg/g)	1,2,3,7,8,9-HxCDD (pg/g)	2,3,7,8-TCDF (pg/g)
WC-SED-1	11/22/06	0 - 0.5	Crane River - salt marsh	4.78	18.4	22.5	224	81.0	11.4
WC-SED-2	11/22/06	0 - 0.5	Crane River - salt marsh	--	--	--	--	--	--
WC-SED-3	11/22/06	0 - 0.5	Crane River - mud flats	0.130 A [6]	0.286 A [6]	0.434 A	0.906 A	0.947 A	0.596 A
WC-SED-4	11/22/06	0 - 0.5	Crane River - salt marsh	3.93	10.5 A [6]	17.8 A	90.7	40.4	13.8 [7]
WC-SED-5	11/22/06	0 - 0.5	Crane River - salt marsh	--	--	--	--	--	--
WC-SED-6	11/22/06	0 - 0.5	Crane River - salt marsh	6.44 Q	14.2	29.3	133	54.1	20.6 [7]
WC-SED-7	11/22/06	0 - 0.5	Crane River - mud flats	--	--	--	--	--	--
WC-SED-8	11/22/06	0 - 0.5	Crane River - salt marsh	--	--	--	--	--	--
WC-SED-9	11/22/06	0 - 0.5	Crane River - mud flats	2.64 Q	7.63 A [6]	12.9	70.1	35.1	10.2 [7]
WC-SED-10	11/22/06	0 - 0.5	Crane River - salt marsh	--	--	--	--	--	--
WC-SED-11	11/22/06	0 - 0.5	Crane River - mud flats	--	--	--	--	--	--
WC-SED-12	11/22/06	0 - 0.5	Crane River - salt marsh	2.81 A	7.45 A	10.9 A	67.5	32.7	10.9 [7]
WC-SED-13	11/22/06	0 - 0.5	Crane River - mud flats	0.137 QA [6]	0.472 QA	0.827 A	2.25 A	2.14 A	0.794 QA
WC-SED-14	11/21/06	0 - 0.5	Crane River - salt marsh	--	--	--	--	--	--
WC-SED-15	11/21/06	0 - 0.5	Crane River - salt marsh	--	--	--	--	--	--
WC-SED-16	11/21/06	0 - 0.5	Crane River - salt marsh	5.61 Q	21.4 Q	49.5 [6]	276	107	16.7 [7]
WC-SED-17	11/22/06	0 - 0.5	Crane River - mud flats	--	--	--	--	--	--
WC-SED-18	11/21/06	0 - 0.5	Crane River - salt marsh	--	--	--	--	--	--
WC-SED-19	11/22/06	0 - 0.5	Crane River - mud flats	1.02 QA	2.28 QA	5.07 A [6]	17.6	9.88	3.38 [7]
WC-SED-20	11/21/06	0 - 0.5	Crane River - salt marsh	5.33 Q	6.07 QA	10.6	42.4	33.7	2.85 [7]
Number of Samples				10	10	10	10	10	10
Number of Detections				10	10	10	10	10	10
Arithmetic Mean Concentration [4]				3.28	8.87	16.0	92.4	37.7	9.12
Minimum Detected Concentration				0.130	0.286	0.434	0.906	0.947	0.596
Maximum Detected Concentration				6.44	21.4	49.5	276	107	20.6
Location of Maximum Detected Concentration				WC-SED-6	WC-SED-16	WC-SED-16	WC-SED-16	WC-SED-16	WC-SED-6

Footnotes:
ft bgs = feet below ground surface
mg/kg = milligrams per kilogram.
pg/g = picograms per gram.
XRF = x-ray fluorescence
"--" = not analyzed.
[n] = Non-detected values assumed present at one-half the quantitation limit.

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2. Data transcribed from Table 10 within the October 3, 1996 Final Site Inspection Prioritization Report prepared by Stone & Webster Environmental Technology & Services (prepared for the United States Environmental Protection Agency - New England Office of Site Remediation and Restoration.
3. Data transcribed from the River Sediment Analysis summary table within the May 1984 Engineering Report for Danversport Tanning Co. prepared by SP, Inc.
4. Laboratory data.
5. XRF data.
6. Estimated Maximum Possible Concentration
7. Maximum value among initial run and diluted analysis applied.

A = Amount detected is less than the Lower Calibration Limit.
U = Not detected at the presented laboratory reporting limit.
Q = Indicates the presence of a quantitative interference.
This situation generally results in an underestimation of the affected analytes.
E = Amount detected is greater than the Upper Calibration Limit.

TABLE 4
SUMMARY OF SEDIMENT DATA
Former Creese and Cook Tannery
25 Clinton Avenue
Danvers, Massachusetts

CAS Number (if available)				57117-41-6	57117-31-4				
Sample ID	Sample Date	Sample Depth (ft bgs)	Sample Area	1,2,3,7,8-PeCDF (pg/g)	2,3,4,7,8-PeCDF (pg/g)	1,2,3,4,7,8-HxCDF (pg/g)	1,2,3,6,7,8-HxCDF (pg/g)	2,3,4,6,7,8-HxCDF (pg/g)	1,2,3,7,8,9-HxCDF (pg/g)
HBTF-1	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-2	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-3	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-4	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-5	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-6	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-7	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-8	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-9	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-10	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-11	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
HBTF-12	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--	--
[1] Marsh-1	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-2	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-3	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-4	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-5	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-6	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-11	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-12	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--	--
[1] Marsh-7	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--	--
[1] Marsh-8	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--	--
[1] Marsh-9	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--	--
[1] Marsh-10	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--	--
[1] Mud Flat-1	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Mud Flat-3	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Mud Flat-4	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Mud Flat-5	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Mud Flat-6	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Mud Flat-7	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[1] Dup-1 (Mud Flat-7)	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--	--
[3] RR Bridge	May-84		Railroad Bridge	--	--	--	--	--	--
[3] Steam Bridge	May-84		Steam Bridge	--	--	--	--	--	--

TABLE 4
SUMMARY OF SEDIMENT DATA
Former Creese and Cook Tannery
25 Clinton Avenue
Danvers, Massachusetts

CAS Number (if available)				57117-41-6		57117-31-4													
Sample ID	Sample Date	Sample Depth (ft bgs)	Sample Area	1,2,3,7,8-PeCDF (pg/g)		2,3,4,7,8-PeCDF (pg/g)		1,2,3,4,7,8-HxCDF (pg/g)		1,2,3,6,7,8-HxCDF (pg/g)		2,3,4,6,7,8-HxCDF (pg/g)		1,2,3,7,8,9-HxCDF (pg/g)					
WC-SED-1	11/22/06	0 - 0.5	Crane River - salt marsh	5.26	A	17.7		36.1		24.1		55.0		6.15	A				
WC-SED-2	11/22/06	0 - 0.5	Crane River - salt marsh	--		--		--		--		--		--					
WC-SED-3	11/22/06	0 - 0.5	Crane River - mud flats	0.177	A	0.264	A	0.286	A	0.233	A	0.298	A [6]	0.776	U				
WC-SED-4	11/22/06	0 - 0.5	Crane River - salt marsh	3.61	A	13.7	A	16.3	A	12.7	A	21.5		2.68	A				
WC-SED-5	11/22/06	0 - 0.5	Crane River - salt marsh	--		--		--		--		--		--					
WC-SED-6	11/22/06	0 - 0.5	Crane River - salt marsh	9.21	QA	35.3	Q	48.5		28.5		46.2		5.72	A				
WC-SED-7	11/22/06	0 - 0.5	Crane River - mud flats	--		--		--		--		--		--					
WC-SED-8	11/22/06	0 - 0.5	Crane River - salt marsh	--		--		--		--		--		--					
WC-SED-9	11/22/06	0 - 0.5	Crane River - mud flats	3.93	QA	13.3	Q	16.7		13.0		22.0		3.12	A				
WC-SED-10	11/22/06	0 - 0.5	Crane River - salt marsh	--		--		--		--		--		--					
WC-SED-11	11/22/06	0 - 0.5	Crane River - mud flats	--		--		--		--		--		--					
WC-SED-12	11/22/06	0 - 0.5	Crane River - salt marsh	3.26	A	10.6	A	14.2	A	10.7	A	18.4		2.61	A				
WC-SED-13	11/22/06	0 - 0.5	Crane River - mud flats	0.297	QA	0.577	QA	0.617	A	0.527	A	0.732	A	0.127	A [6]				
WC-SED-14	11/21/06	0 - 0.5	Crane River - salt marsh	--		--		--		--		--		--					
WC-SED-15	11/21/06	0 - 0.5	Crane River - salt marsh	--		--		--		--		--		--					
WC-SED-16	11/21/06	0 - 0.5	Crane River - salt marsh	9.37	QA	47.6	Q	71.4		47.9		73.2		9.08	A				
WC-SED-17	11/22/06	0 - 0.5	Crane River - mud flats	--		--		--		--		--		--					
WC-SED-18	11/21/06	0 - 0.5	Crane River - salt marsh	--		--		--		--		--		--					
WC-SED-19	11/22/06	0 - 0.5	Crane River - mud flats	1.27	QA	5.06	QA	5.15	A	3.89	A	6.47		0.974	A				
WC-SED-20	11/21/06	0 - 0.5	Crane River - salt marsh	1.35	QA	3.61	QA	5.89	A	4.14	A	8.61		1.35	A				
Number of Samples				10		10		10		10		10		10					
Number of Detections				10		10		10		10		10		9					
Arithmetic Mean Concentration [a]				3.77		14.8		21.5		14.6		25.2		3.22					
Minimum Detected Concentration				0.177		0.264		0.286		0.233		0.298		0.127					
Maximum Detected Concentration				9.37		47.6		71.4		47.9		73.2		9.08					
Location of Maximum Detected Concentration				WC-SED-16		WC-SED-16		WC-SED-16		WC-SED-16		WC-SED-16		WC-SED-16					

Footnotes:
ft bgs = feet below ground surface
mg/kg = milligrams per kilogram.
pg/g = picograms per gram.
XRF = x-ray fluorescence
"--" = not analyzed.
[a] = Non-detected values assumed present at one-half the quantitation limit.
1. Data transcribed from Table 3 within the June 6, 2005 Limited Assessment report prepared by Geologic Field Services, Inc. (GFS).
2. Data transcribed from Table 10 within the October 3, 1996 Final Site Inspection Prioritization Report prepared by Stone & Webster Environmental Technology & Services (prepared for the United States Environmental Protection Agency - New England Office of Site Remediation and Restoration.
3. Data transcribed from the River Sediment Analysis summary table within the May 1984 Engineering Report for Danversport Tanning Co. prepared by SP, Inc.
4. Laboratory data.
5. XRF data.
6. Estimated Maximum Possible Concentration.
7. Maximum value among initial run and diluted analysis applied.
A = Amount detected is less than the Lower Calibration Limit.
U = Not detected at the presented laboratory reporting limit.
Q = Indicates the presence of a quantitative interference.
This situation generally results in an underestimation of the affected analytes.
E = Amount detected is greater than the Upper Calibration Limit.

TABLE 4
SUMMARY OF SEDIMENT DATA
Former Creese and Cook Tannery
25 Clinton Avenue
Danvers, Massachusetts

CAS Number (if available)							3582-46-9	
Sample ID	Sample Date	Sample Depth (ft bgs)	Sample Area	1,2,3,4,7,8-HpCDF (pg/g)	1,2,3,4,7,8,9-HpCDF (pg/g)	OCDF (pg/g)	1,2,3,4,6,7,8-HpCDD (pg/g)	OCDD (pg/g)
WC-SED-1	11/22/06	0 - 0.5	Crane River - salt marsh	1040	48.8	2180	4880	36300 E
WC-SED-2	11/22/06	0 - 0.5	Crane River - salt marsh	--	--	--	--	--
WC-SED-3	11/22/06	0 - 0.5	Crane River - mud flats	2.71 A	0.776 U	3.75 A	40.2	2040
WC-SED-4	11/22/06	0 - 0.5	Crane River - salt marsh	364	12.8 A	680	2180	17300 E
WC-SED-5	11/22/06	0 - 0.5	Crane River - salt marsh	--	--	--	--	--
WC-SED-6	11/22/06	0 - 0.5	Crane River - salt marsh	818	31.1	1300	2690	20000 E
WC-SED-7	11/22/06	0 - 0.5	Crane River - mud flats	--	--	--	--	--
WC-SED-8	11/22/06	0 - 0.5	Crane River - salt marsh	--	--	--	--	--
WC-SED-9	11/22/06	0 - 0.5	Crane River - mud flats	352	16.1	699	1700	14200 E
WC-SED-10	11/22/06	0 - 0.5	Crane River - salt marsh	--	--	--	--	--
WC-SED-11	11/22/06	0 - 0.5	Crane River - mud flats	--	--	--	--	--
WC-SED-12	11/22/06	0 - 0.5	Crane River - salt marsh	318	12.7 A	512	1640	13200 E
WC-SED-13	11/22/06	0 - 0.5	Crane River - mud flats	8.12	0.425 A	10.5 A	84.2	4530
WC-SED-14	11/21/06	0 - 0.5	Crane River - salt marsh	--	--	--	--	--
WC-SED-15	11/21/06	0 - 0.5	Crane River - salt marsh	--	--	--	--	--
WC-SED-16	11/21/06	0 - 0.5	Crane River - salt marsh	1200	48.9	1780	4870 E	38700 E
WC-SED-17	11/22/06	0 - 0.5	Crane River - mud flats	--	--	--	--	--
WC-SED-18	11/21/06	0 - 0.5	Crane River - salt marsh	--	--	--	--	--
WC-SED-19	11/22/06	0 - 0.5	Crane River - mud flats	97.7	3.76 A	151	405	3600
WC-SED-20	11/21/06	0 - 0.5	Crane River - salt marsh	282	9.48	1310	1490	23500 E
Number of Samples				10	10	10	10	10
Number of Detections				10	9	10	10	10
Arithmetic Mean Concentration [a]				448	18.4	863	1998	17337
Minimum Detected Concentration				2.71	0.425	3.75	40.2	2040
Maximum Detected Concentration				1200	48.9	2180	4880	38700
Location of Maximum Detected Concentration				WC-SED-16	WC-SED-16	WC-SED-1	WC-SED-1	WC-SED-16

Footnotes:
ft bgs = feet below ground surface
mg/kg = milligrams per kilogram.
pg/g = picograms per gram.
XRF = x-ray fluorescence
"--" = not analyzed.
[a] = Non-detected values assumed present at one-half the quantitation limit.
1. Data transcribed from Table 3 within the June 6, 2005 Limited Assessment report prepared by Geologic Field Services, Inc. (GFS).
2. Data transcribed from Table 10 within the October 3, 1996 Final Site Inspection Prioritization Report prepared by Stone & Webster Environmental Technology & Services (prepared for the United States Environmental Protection Agency - New England Office of Site Remediation and Restoration.
3. Data transcribed from the River Sediment Analysis summary table within the May 1984 Engineering Report for Danversport Tanning Co. prepared by SP, Inc.
4. Laboratory data.
5. XRF data.
6. Estimated Maximum Possible Concentration
7. Maximum value among initial run and diluted analysis applied.
A = Amount detected is less than the Lower Calibration Limit.
U = Not detected at the presented laboratory reporting limit.
Q = Indicates the presence of a quantitative interference.
This situation generally results in an underestimation of the affected analytes.
E = Amount detected is greater than the Upper Calibration Limit.

TABLE 4
SUMMARY OF SEDIMENT DATA
Former Creese and Cook Tannery
25 Clinton Avenue
Danvers, Massachusetts

CAS Number (if available)							3582-46-9	
Sample ID	Sample Date	Sample Depth (ft bgs)	Sample Area	1,2,3,4,7,8-HpCDF (pg/g)	1,2,3,4,7,8,9-HpCDF (pg/g)	OCDF (pg/g)	1,2,3,4,6,7,8-HpCDD (pg/g)	OCDD (pg/g)
HBTF-1	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--
HBTF-2	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--
HBTF-3	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--
HBTF-4	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--
HBTF-5	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--
HBTF-6	5/20/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--
HBTF-7	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--
HBTF-8	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--
HBTF-9	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--
HBTF-10	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--
HBTF-11	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--
HBTF-12	7/29/1996 & 7/30/1996	0.5 - 1.5	Tidal Flats	--	--	--	--	--
[1] Marsh-1	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--
[1] Marsh-2	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--
[1] Marsh-3	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--
[1] Marsh-4	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--
[1] Marsh-5	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--
[1] Marsh-6	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--
[1] Marsh-11	April 2005	0 - 1.5	Salt Marsh Area A	--	--	--	--	--
[1] Marsh-12	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--
[1] Marsh-7	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--
[1] Marsh-8	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--
[1] Marsh-9	April 2005	0 - 1.5	Salt Marsh Area B	--	--	--	--	--
[1] Marsh-10	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--
[1] Mud Flat-1	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--
[1] Mud Flat-3	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--
[1] Mud Flat-4	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--
[1] Mud Flat-5	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--
[1] Mud Flat-6	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--
[1] Mud Flat-7	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--
[1] Dup-1 (Mud Flat-7)	April 2005	0 - 1.5	Mud Flats	--	--	--	--	--
[3] RR Bridge	May-84		Railroad Bridge	--	--	--	--	--
[3] Steam Bridge	May-84		Steam Bridge	--	--	--	--	--

QA: KA/AB Date: 12/22/06

TABLE 5
VALUES USED FOR DAILY INTAKE CALCULATIONS

Former Creese & Cook Disposal Site
25 Clinton Avenue
Danvers, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Reference
Incidental ingestion of and dermal contact with soil	Trespasser	Youth (ages 6-11)	Disposal Site	EPC	Exposure Point Concentration	Chemical-specific	mg/kg	1.
				IR_s	Ingestion rate of soil	50	mg/day	2.
				AF	Skin-soil adherence factor	0.14	mg/cm^2 - day	3.
				SA	Skin surface area	1,863	cm^2	4.
				EF	Exposure Frequency	91	events/year	5.
				ED	Exposure Duration	1	day/event	6.
				EP	Exposure Period	5	years	7.
				BW	Body weight	27	kg	8.
				AT_c	Averaging Time-cancer	70	years	9.
				AT_{nc}	Averaging Time-noncancer	5	years	9.
				RAF	Relative Absorption Factor	Chemical-specific	unitless	10
				C1	Units Conversion Factor	365	days/year	
				C2	Units Conversion Factor	1,000,000	mg/kg	

Average Daily Intake (ADI) Equations:

$ADI_{ingestion}$ (mg/kg-d) = EPC * IR * EF * ED * EP * 1/BW * 1/AT * 1/C1 * 1/C2 *RAF_i

ADI_{dermal} (mg/kg-d) = EPC * SA * AF * EF * ED * EP * 1/BW * 1/AT * 1/C1 * 1/C2 * RAF_d

1. The exposure point concentration (EPC) is the arithmetic mean concentration of each chemical of potential concern (COPC) in surface (0-1' bgs) soil at the Site.
2. Daily soil ingestion rate for adults (ages >6 years) is from Appendix B, Table B-3 of the Massachusetts Department of Environmental Protection (DEP), Bureau of Waste Site Cleanup and Office of Research and Standards, Guidance for Disposal Site Risk Characterization - In Support of the Massachusetts Contingency Plan, Interim Final Policy, WSC/ORS-95-141, July 1995.
3. The Weighted Adherence Factor for the trespasser was calculated using the Youth Soccer Players #1 exposure scenario, from DEP's "Technical Update: Weighted Skin-Soil Adherence Factors", April 2002. Skin surface area values were used for children aged 6 <11 years. Parts of the body assumed to be exposed to soil include hands, forearms and feet.
4. Skin surface area is based on the 50th percentile skin surface area for males and females 6-11 years of age, from Appendix B, Table B-2 of the Massachusetts Department of Environmental Protection (DEP), Bureau of Waste Site Cleanup and Office of Research and Standards, Guidance for Disposal Site Risk Characterization - In Support of the Massachusetts Contingency Plan, Interim Final Policy, WSC/ORS-95-141, July 1995. Parts of the body assumed to be exposed include forearms (640 cm^2), feet (724 cm^2) and hands (499 cm^2).
5. Frequency of exposure describes how often the exposure event occurs over a given period of time. It was assumed that trespassers would be exposed to contaminants in soil for 3 days per week during the seven non-winter months (April-October).
6. The exposure duration describes how long each individual exposure event might last. For dermal contact with and incidental ingestion of soil, exposure duration is by definition 1 day/event. During this event, the receptor is assumed to receive the daily intake of contaminants.
7. The exposure period describes the length of time over which the receptor comes into contact with contaminants. We have assumed that exposure occurs over the course of 5 years, in accordance with the Massachusetts Contingency Plan (MCP). (310 CMR 40.0953)
8. Body weight is based on the average of the 50th percentile body weight for males and females 6-11 years. From Appendix B, Table B-1 of the Massachusetts Department of Environmental Protection (DEP), Bureau of Waste Site Cleanup and Office of Research and Standards, Guidance for Disposal Site Risk Characterization - In Support of the Massachusetts Contingency Plan, Interim Final Policy, WSC/ORS-95-141, July 1995.
9. For noncancer risks, the averaging period is set equal to the duration of the exposure period. The averaging period is equal to a lifetime (i.e., 70 years) when estimating cancer risks.
10. Relative absorption factors were generally obtained from MADEP, Bureau of Waste Site Cleanup and Office of Research and Standards (ORS), Workbook: MCP Toxicity.xls, Sheet Toxicity, January 2006.

EXPOSURE FACTORS USED IN RISK CALCULATIONS

TRESPASSER-SOIL

	dermal	ingestion
Cancer	1.70E-07	3.26E-08
NC	2.38E-06	4.56E-07

TABLE 6
VALUES USED FOR DAILY INTAKE CALCULATIONS

Former Creese & Cook Disposal Site
25 Clinton Avenue
Danvers, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Fugitive Dust

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Reference
Inhalation of fugitive dust	Trespasser	Youth (6-11 years)	Disposal Site	EPC	Exposure Point Concentration	Chemical-specific	mg/m^3	1
				RPair	Respirable Particulates in Air	32	ug/m^3	2.
				EF	Exposure Frequency	91	event/year	3.
				ED	Exposure Duration	1	hours/event	4.
				EP	Exposure Period	5	years	5.
				AT_c	Averaging Time-cancer	70	years	6.
				AT_{nc}	Averaging Time-noncancer	5	years	6.
				C1	Units Conversion Factor	365	days/year	
				C2	Units Conversion Factor	24	hours/day	

TRESPASSER-FUGITIVE DUST	
	inhalation
Cancer	7.42E-04
NC	1.04E-02

Average Daily Exposure (ADE) Equations (Trespasser):

$ADI_{inhalation}$ (mg/m^3) = EPC * EF * EP * ED * 1/AT * 1/C1 * 1/C2

Where : EPC = Soil EPC (mg/kg) * [RPair (ug/m^3) * [OHM]soil (mg/kg) * 0.000000001 (kg/ug)]

Notes:

1. EPCs for outdoor particulates were estimated from soil EPCs using the emission equations provided above.
2. The airborne particulate concentration with particle aerodynamic diameter of less than 10 micrometers (PM10) was obtained from the Massachusetts Department of Environmental Protection (DEP), Bureau of Waste Site Cleanup and Office of Research and Standards, Guidance for Disposal Site Risk Characterization - In Support of the Massachusetts Contingency Plan, Interim Final Policy, WSC/ORS-95-141, July 1995.

   The PM10 value for the open field scenario was used to evaluate potential exposure by tresspassers.
3. Frequency of exposure describes how often the exposure event occurs over a given period of time. It was assumed that, during the 7 non-winter months, trespassers are exposed to soil 3 days per week
4. The exposure duration describes how long each individual exposure event might last. Trespassers of the Site were assumed to be exposed for only one hour per event.
5. The exposure period describes the length of time over which the receptor comes into contact with contaminants: We have assumed that exposure occurs over the course of 5 years, in accordance with the Massachusetts Contingency Plan (MCP) (310 CMR 40.0953)
6. For noncancer risks, the averaging period is set equal to the duration of the exposure period. The averaging period is equal to a lifetime (i.e., 70 years) when estimating cancer risks.

TABLE 7
VALUES USED FOR DAILY INTAKE CALCULATIONS

Former Creese & Cook Disposal Site
25 Clinton Avenue
Danvers, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Sediment
Exposure Medium:	Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Reference
Incidental ingestion of and dermal contact with sediment	Trespasser	Youth (ages 6-11)	Disposal Site	EPC	Exposure Point Concentration	Chemical-specific	mg/kg	1.
				IR_s	Ingestion rate of sediment	50	mg/day	2.
				AF	Skin-sediment adherence factor	1	mg/cm^2 - day	3.
				SA	Skin surface area	2,980	cm^2	4.
				EF	Exposure Frequency	61	events/year	5.
				ED	Exposure Duration	1	day/event	6.
				EP	Exposure Period	5	years	7.
				BW	Body weight	27	kg	8.
				AT_c	Averaging Time-cancer	70	years	9.
				AT_{nc}	Averaging Time-noncancer	5	years	9.
				RAF	Relative Absorption Factor	Chemical-specific	unitless	10
				C1	Units Conversion Factor	365	days/year	
				C2	Units Conversion Factor	1,000,000	mg/kg	

EXPOSURE FACTORS USED IN RISK CALCULATIONS

TRESPASSER-SEDIMENT

	dermal	ingestion
Cancer	1.30E-06	2.18E-08
NC	1.82E-05	3.06E-07

Average Daily Intake (ADI) Equations:

$$ADI_{ingestion}\ (mg/kg\text{-}d) = EPC * IR * EF * ED * EP * 1/BW * 1/AT * 1/C1 * 1/C2 * RAF_i$$

$$ADI_{dermal}\ (mg/kg\text{-}d) = EPC * SA * AF * EF * ED * EP * 1/BW * 1/AT * 1/C1 * 1/C2 * RAF_d$$

Notes:

1. The exposure point concentration (EPC) is the arithmetic mean concentration of each chemical of potential concern (COPC) in sediment at the Site.
2. Daily soil ingestion rate for adults (ages >6 years) is from Appendix B, Table B-3 of the Massachusetts Department of Environmental Protection (DEP), Bureau of Waste Site Cleanup and Office of Research and Standards, Guidance for Disposal Site Risk Characterization - In Support of the Massachusetts Contingency Plan, Interim Final Policy, WSC/ORS-95-141, July 1995.
3. The Adherence Factor for sediment was obtained from MADEP's "Technical Update: Weighted Skin-Soil Adherence Factors", April 2002. This AF is not skin surface area-weighted.
4. Skin surface area is based on the average of the 50th percentile skin surface area for males and females 6-11 years of age, from Appendix B, Table B-2 of MADEP 1995.
   Parts of the body assumed to be exposed include forearms (640 cm^2), feet (724 cm^2), lower legs (1,117 cm^2) and hands (499 cm^2).
5. Frequency of exposure describes how often the exposure event occurs over a given period of time. We assumed that trespassers would be exposed to contaminants in sediment for 2 days per week during the seven non-winter months (April-October).
6. The exposure duration describes how long each individual exposure event might last. For dermal contact with and incidental ingestion of sediment, exposure duration is by definition 1 day/event. During this event, the receptor is assumed to receive the daily intake of contaminants.
7. The exposure period describes the length of time over which the receptor comes into contact with contaminants. We have assumed that exposure occurs over the course of 5 years, in accordance with the Massachusetts Contingency Plan (MCP). (310 CMR 40.0953)
8. Body weight is based on the 50th percentile body weight for males and females aged 6-11 years. From Appendix B, Table B-1 of the Massachusetts Department of Environmental Protection (DEP), Bureau of Waste Site Cleanup and Office of Research and Standards, Guidance for Disposal Site Risk Characterization - In Support of the Massachusetts Contingency Plan, Interim Final Policy, WSC/ORS-95-141, July 1995, age-weighted for specific age groups.
9. For noncancer risks, the averaging period is set equal to the duration of the exposure period. The averaging period is equal to a lifetime (i.e., 70 years) when estimating cancer risks.
10. Relative absorption factors were generally obtained from MADEP, Bureau of Waste Site Cleanup and Office of Research and Standards (ORS), Workbook: MCP Toxicity.xls, Sheet Toxicity, January 2006.

TABLE 8
RELATIVE ABSORPTION FACTORS FOR SOIL

Former Creese & Cook Disposal Site
25 Clinton Avenue
Danvers, Massachusetts

Chemical of Potential Concern	CAS Number	Soil (1)		Source (2)
		Oral Absorption Fraction from Soil[1]	Dermal Absorption Fraction from Soil	
Dioxins				
2,3,7,8-TCDD	1746-01-6	1.00E+00	2.00E-01	MADEP, 2006
1,2,3,7,8-PeCDD	40321-76-4	1.00E+00	2.00E-01	(3)
1,2,3,4,7,8-HxCDD	39227-28-6	1.00E+00	2.00E-01	(3)
1,2,3,6,7,8-HxCDD	57653-85-7	1.00E+00	2.00E-01	(3)
1,2,3,7,8,9-HxCDD	19408-74-3	1.00E+00	2.00E-01	(3)
2,3,7,8-TCDF	51207-31-9	1.00E+00	2.00E-01	(3)
1,2,3,7,8-PeCDF	57117-41-6	1.00E+00	2.00E-01	(3)
2,3,4,7,8-PeCDF	57117-31-4	1.00E+00	2.00E-01	(3)
1,2,3,4,7,8-HxCDF		1.00E+00	2.00E-01	(3)
1,2,3,6,7,8-HxCDF		1.00E+00	2.00E-01	(3)
2,3,4,6,7,8-HxCDF		1.00E+00	2.00E-01	(3)
1,2,3,7,8,9-HxCDF		1.00E+00	2.00E-01	(3)
1,2,3,4,7,8-HpCDF		1.00E+00	2.00E-01	(3)
1,2,3,4,7,8,9-HpCDF		1.00E+00	2.00E-01	(3)
OCDF		1.00E+00	2.00E-01	(3)
1,2,3,4,6,7,8-HpCDD	35822-46-9	1.00E+00	2.00E-01	(3)
OCDD		1.00E+00	2.00E-01	(3)
Inorganics				
Arsenic	7440-38-2	1.00E+00	3.00E-02	MADEP, 2006
Chromium VI	18540-29-9	1.00E+00	9.00E-02	MADEP, 2006
Lead	7439-92-1	5.00E-01	6.00E-03	MADEP, 2006

Footnotes:

1. Assumed 100% for compounds without MADEP oral RAF values.
2. MADEP, Bureau of Waste Site Cleanup and Office of Research and Standards (ORS), Workbook: MCP Toxicity.xls, Sheet Toxicity, January 9, 2006
3. Assumed oral and dermal absorption fraction for 2,3,7,8-TCDD.

TABLE 9
SUMMARY OF EXPOSURE POINT CONCENTRATIONS

Former Creese & Cook Disposal Site
25 Clinton Avenue
Danvers, Massachusetts

Chemical of Potential Concern	CAS Number	Trespasser/Recreational Receptor		
		Soil	Fugitive Dust	Sediment
Dioxins				
2,3,7,8-TCDD	1746-01-6	6.14E-06	1.96E-13	3.28E-06
1,2,3,7,8-PeCDD	40321-76-4	1.17E-05	3.73E-13	8.87E-06
1,2,3,4,7,8-HxCDD	39227-28-6	3.03E-05	9.71E-13	1.60E-05
1,2,3,6,7,8-HxCDD	57653-85-7	4.41E-04	1.41E-11	9.24E-05
1,2,3,7,8,9-HxCDD	19408-74-3	9.79E-05	3.13E-12	3.77E-05
2,3,7,8-TCDF	51207-31-9	1.50E-06	4.80E-14	9.12E-06
1,2,3,7,8-PeCDF	57117-41-6	1.60E-06	5.12E-14	3.77E-06
2,3,4,7,8-PeCDF	57117-31-4	5.06E-06	1.62E-13	1.48E-05
1,2,3,4,7,8-HxCDF		3.00E-05	9.59E-13	2.15E-05
1,2,3,6,7,8-HxCDF		1.46E-05	4.68E-13	1.46E-05
2,3,4,6,7,8-HxCDF		8.48E-05	2.71E-12	2.52E-05
1,2,3,7,8,9-HxCDF		4.22E-06	1.35E-13	3.22E-06
1,2,3,4,7,8-HpCDF		1.69E-03	5.42E-11	4.48E-04
1,2,3,4,7,8,9-HpCDF		4.51E-05	1.44E-12	1.84E-05
OCDF		5.65E-03	1.81E-10	8.63E-04
1,2,3,4,6,7,8-HpCDD	35822-46-9	1.82E-02	5.82E-10	2.00E-03
OCDD		2.04E-01	6.52E-09	1.73E-02
Inorganics				
Arsenic	7440-38-2	4.60E+01	1.47E-06	6.19E+01
Lead	7439-92-1	6.13E+01	1.96E-06	6.45E+01
Chromium VI	18540-29-9	2.29E+01	7.32E-07	9.66E+00

All concentrations are presented in parts per million (ppm) / milligrams per kilogram (mg/kg).

TABLE 10
NON-CANCER TOXICITY DATA - ORAL/DERMAL

Former Creese & Cook Disposal Site
25 Clinton Avenue
Danvers, Massachusetts

Chemical of Potential Concern	CAS Number	Oral RfD		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD: Target Organ(s)	
		Chronic	Units			Source	Date
Dioxins							
2,3,7,8-TCDD	1746-01-6	--	mg/kg/day	--	--	--	
1,2,3,7,8-PeCDD	40321-76-4	--	mg/kg/day	--	--	--	
1,2,3,4,7,8-HxCDD	39227-28-6	--	mg/kg/day	--	--	--	
1,2,3,6,7,8-HxCDD	57653-85-7	--	mg/kg/day	--	--	--	
1,2,3,7,8,9-HxCDD	19408-74-3	--	mg/kg/day	--	--	--	
2,3,7,8-TCDF	51207-31-9	--	mg/kg/day	--	--	--	
1,2,3,7,8-PeCDF	57117-41-6	--	mg/kg/day	--	--	--	
2,3,4,7,8-PeCDF	57117-31-4	--	mg/kg/day	--	--	--	
1,2,3,4,7,8-HxCDF		--	mg/kg/day	--	--	--	
1,2,3,6,7,8-HxCDF		--	mg/kg/day	--	--	--	
2,3,4,6,7,8-HxCDF		--	mg/kg/day	--	--	--	
1,2,3,7,8,9-HxCDF		--	mg/kg/day	--	--	--	
1,2,3,4,7,8-HpCDF		--	mg/kg/day	--	--	--	
1,2,3,4,7,8,9-HpCDF		--	mg/kg/day	--	--	--	
OCDF		--	mg/kg/day	--	--	--	
1,2,3,4,6,7,8-HpCDD	35822-46-9	--	mg/kg/day	--	--	--	
OCDD		--	mg/kg/day	--	--	--	
Inorganics							
Arsenic	7440-38-2	3.00E-04	mg/kg/day	Skin; vascular system	3 x 1	IRIS	12/22/2006
Chromium VI	18540-29-9	3.00E-03	mg/kg/day	Skin; vascular system	3 x 1	IRIS	12/22/2006
Lead	7439-92-1	7.50E-04	mg/kg/day	CNS	--	MADEP	1992

Footnotes:
IRIS = USEPA's Integrated Risk Information System (www.epa.gov/iris). Searched December 2006.
MADEP, 1992 = Residential Shortform.doc
-- = No information available.
CNS = Central Nervous System

TABLE 11
NON-CANCER TOXICITY DATA - INHALATION

Former Creese & Cook Disposal Site
25 Clinton Avenue
Danvers, Massachusetts

Chemical of Potential Concern	CAS Number	Inhalation RfC		Primary Target Organ(s)	Combined Uncertainty/ Modifying Factors	RfC:Source	
		Chronic	Units			Source	Date
Dioxins							
2,3,7,8-TCDD	1746-01-6	--	mg/m^3	--	--	--	
1,2,3,7,8-PeCDD	40321-76-4	--	mg/m^3	--	--	--	
1,2,3,4,7,8-HxCDD	39227-28-6	--	mg/m^3	--	--	--	
1,2,3,6,7,8-HxCDD	57653-85-7	--	mg/m^3	--	--	--	
1,2,3,7,8,9-HxCDD	19408-74-3	--	mg/m^3	--	--	--	
2,3,7,8-TCDF	51207-31-9	--	mg/m^3	--	--	--	
1,2,3,7,8-PeCDF	57117-41-6	--	mg/m^3	--	--	--	
2,3,4,7,8-PeCDF	57117-31-4	--	mg/m^3	--	--	--	
1,2,3,4,7,8-HxCDF		--	mg/m^3	--	--	--	
1,2,3,6,7,8-HxCDF		--	mg/m^3	--	--	--	
2,3,4,6,7,8-HxCDF		--	mg/m^3	--	--	--	
1,2,3,7,8,9-HxCDF		--	mg/m^3	--	--	--	
1,2,3,4,7,8-HpCDF		--	mg/m^3	--	--	--	
1,2,3,4,7,8,9-HpCDF		--	mg/m^3	--	--	--	
OCDF		--	mg/m^3	--	--	--	
1,2,3,4,6,7,8-HpCDD	35822-46-9	--	mg/m^3	--	--	--	
OCDD		--	mg/m^3	--	--	--	
Inorganics							
Arsenic	7440-38-2	2.50E-06	mg/m^3	--	--	MADEP CHEM/AAL	
Chromium VI	18540-29-9	1.00E-04	mg/m^3	Lungs	300 x 1	IRIS	12/22/2006
Lead	7439-92-1	1.00E-03	mg/m^3	CNS	--	MADEP CHEM/AAL	

Footnotes:

IRIS = USEPA's Integrated Risk Information System (www.epa.gov/iris). Searched December 2006.
MADEP, CHEM/AAL = Massachusetts Department of Environmental Protection. The Chemical Health Effects Assessment Methodology and the Method to Derive Allowable Ambient
CNS = Central Nervous System
-- = No information available.

TABLE 12
CANCER TOXICITY DATA - ORAL/DERMAL

Former Creese & Cook Disposal Site
25 Clinton Avenue
Danvers, Massachusetts

Chemical of Potential Concern	CAS Number	Oral Cancer Slope Factor		USEPA 1986 Weight of Evidence/ Cancer Guideline Description	Oral CSF	
		Value	Units		Source	Date
Dioxins						
2,3,7,8-TCDD	1746-01-6	1.50E+05	(mg/kg-day)$^{-1}$	B2	HEAST	1997
1,2,3,7,8-PeCDD	40321-76-4	7.50E+04	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
1,2,3,4,7,8-HxCDD	39227-28-6	1.50E+04	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
1,2,3,6,7,8-HxCDD	57653-85-7	1.50E+04	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
1,2,3,7,8,9-HxCDD	19408-74-3	1.50E+04	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
2,3,7,8-TCDF	51207-31-9	1.50E+04	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
1,2,3,7,8-PeCDF	57117-41-6	7.50E+04	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
2,3,4,7,8-PeCDF	57117-31-4	7.50E+04	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
1,2,3,4,7,8-HxCDF		1.50E+04	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
1,2,3,6,7,8-HxCDF		1.50E+04	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
2,3,4,6,7,8-HxCDF		1.50E+04	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
1,2,3,7,8,9-HxCDF		1.50E+04	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
1,2,3,4,7,8-HpCDF		1.50E+04	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
1,2,3,4,7,8,9-HpCDF		1.50E+04	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
OCDF		1.50E+02	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
1,2,3,4,6,7,8-HpCDD	35822-46-9	1.50E+04	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
OCDD		1.50E+02	(mg/kg-day)$^{-1}$	B2	Calculated (1)	
Inorganics						
Arsenic	7440-38-2	1.50E+00	(mg/kg-day)$^{-1}$	A	IRIS	12/22/2006
Chromium VI	18540-29-9	--	(mg/kg-day)$^{-1}$	A (via inhalation)	IRIS	12/22/2006
Lead	7439-92-1	--	(mg/kg-day)$^{-1}$	B2		

Footnotes:

US EPA Weight-of-Evidence Classification of Carcinogenicity:

A: Human carcinogen
B: Probable human carcinogen
B1: Limited evidence of carcinogenicity in humans from epidemiological studies
B2: Sufficient evidence of carcinogenicity in animals, inadequate evidence in humans
C: Possible human carcinogen
D: Not classified
E: No evidence of carcinogenicity

1. The following toxicity equivalency factors (TEFs) were applied to the toxicity value for 2,3,7,8-TCDD to derive a toxicity value for the remaining dioxins:

2,3,7,8-TCDD	1	1,2,3,6,7,8-HxI	0.1
1,2,3,7,8-PeCDD	0.5	2,3,4,6,7,8-HxI	0.1
1,2,3,4,7,8-HxCDD	0.1	1,2,3,7,8,9-HxI	0.1
1,2,3,6,7,8-HxCDD	0.1	1,2,3,4,7,8-HpI	0.1
1,2,3,7,8,9-HxCDD	0.1	1,2,3,4,7,8,9-H	0.1
2,3,7,8-TCDF	0.1	OCDF	0.001
1,2,3,7,8-PeCDF	0.5	1,2,3,4,6,7,8-H	0.1
2,3,4,7,8-PeCDF	0.5	OCDD	0.001
1,2,3,4,7,8-HxCDF	0.1		

IRIS = USEPA's Integrated Risk Information System (www.epa.gov/iris). Searched December, 2006.
HEAST = National Center for Exposure Assessment, Health Effects Assessment Summary Tables, 1997.
MADEP 2006: 'Toxicity.xls' spreadsheet, Office of Research & Standards. January 9, 2006.
-- = Constituent not characterized as carcinogenic or no information available.

QA: LM Date: 12/22/06

TABLE 13
CANCER TOXICITY DATA - INHALATION

Former Creese & Cook Disposal Site
25 Clinton Avenue
Danvers, Massachusetts

Chemical of Potential Concern	CAS Number	Unit Risk		Weight of Evidence/ Cancer Guideline Description	Unit Risk or Inhalation CSF: Source	
		Value	Units		Source	Date
Dioxins						
2,3,7,8-TCDD	1746-01-6	3.30E+05	$(mg/m^3)^{-1}$	B2	HEAST	1997
1,2,3,7,8-PeCDD	40321-76-4	1.65E+05	$(mg/m^3)^{-1}$	B2	Calculated (1)	
1,2,3,4,7,8-HxCDD	39227-28-6	3.30E+04	$(mg/m^3)^{-1}$	B2	Calculated (1)	
1,2,3,6,7,8-HxCDD	57653-85-7	1.65E+04	$(mg/m^3)^{-1}$	B2	Calculated (1)	
1,2,3,7,8,9-HxCDD	19408-74-3	3.30E+03	$(mg/m^3)^{-1}$	B2	Calculated (1)	
2,3,7,8-TCDF	51207-31-9	1.65E+03	$(mg/m^3)^{-1}$	B2	Calculated (1)	
1,2,3,7,8-PeCDF	57117-41-6	1.65E+03	$(mg/m^3)^{-1}$	B2	Calculated (1)	
2,3,4,7,8-PeCDF	57117-31-4	8.25E+02	$(mg/m^3)^{-1}$	B2	Calculated (1)	
1,2,3,4,7,8-HxCDF		1.65E+02	$(mg/m^3)^{-1}$	B2	Calculated (1)	
1,2,3,6,7,8-HxCDF		8.25E+01	$(mg/m^3)^{-1}$	B2	Calculated (1)	
2,3,4,6,7,8-HxCDF		1.65E+01	$(mg/m^3)^{-1}$	B2	Calculated (1)	
1,2,3,7,8,9-HxCDF		8.25E+00	$(mg/m^3)^{-1}$	B2	Calculated (1)	
1,2,3,4,7,8-HpCDF		1.65E+00	$(mg/m^3)^{-1}$	B2	Calculated (1)	
1,2,3,4,7,8,9-HpCDF		8.25E-01	$(mg/m^3)^{-1}$	B2	Calculated (1)	
OCDF		1.65E-03	$(mg/m^3)^{-1}$	B2	Calculated (1)	
1,2,3,4,6,7,8-HpCDD	35822-46-9	8.25E-02	$(mg/m^3)^{-1}$	B2	Calculated (1)	
OCDD		1.65E-06	$(mg/m^3)^{-1}$	B2	Calculated (1)	
Inorganics						
Arsenic	7440-38-2	4.30E+00	$(mg/m^3)^{-1}$	A	IRIS	6/13/2006
Chromium VI	18540-29-9	1.20E+01	$(mg/m^3)^{-1}$	A (via inhalation)	IRIS	6/13/2006
Lead	7439-92-1	--		B2		

Footnotes:

IRIS = USEPA's Integrated Risk Information System (www.epa.gov/iris). Searched December 2006..

HEAST = National Center for Exposure Assessment, Health Effects Assessment Summary Tables, 1997.

A blank space indicates that no toxicity information is available.

1. The following toxicity equivalency factors (TEFs) were applied to the toxicity value for 2,3,7,8-TCDD to derive a toxicity value for the remaining dioxins:

2,3,7,8-TCDD	1	1,2,3,6,7,8-HxCDF	0.1
1,2,3,7,8-PeCDD	0.5	2,3,4,6,7,8-HxCDF	0.1
1,2,3,4,7,8-HxCDF	0.1	1,2,3,7,8,9-HxCDF	0.1
1,2,3,6,7,8-HxCDF	0.1	1,2,3,4,7,8-HpCDF	0.1
1,2,3,7,8,9-HxCDF	0.1	1,2,3,4,7,8,9-HpCDF	0.1
2,3,7,8-TCDF	0.1	OCDF	0.001
1,2,3,7,8-PeCDF	0.5	1,2,3,4,6,7,8-HpCDD	0.1
2,3,4,7,8-PeCDF	0.5	OCDD	0.001
1,2,3,4,7,8-HxCDF	0.1		

TABLE 14
SUMMARY OF RISK ESTIMATES

Former Creese & Cook Disposal Site
25 Clinton Avenue
Danvers, Massachusetts

Receptor	Exposure Point	Exposure Medium	Exposure Pathway	Hazard Index	Excess Lifetime Cancer Risk
Trespasser	Site	Soil	Dermal Contact	0.01	1.E-05
		Soil	Incidental Ingestion	0.09	1.E-05
		Fugitive Dust	Inhalation	0.01	1.E-08
		Sediment	Dermal Contact	0.1	2.E-05
		Sediment	Incidental Ingestion	0.08	3.E-06
CUMULATIVE RISK				**0.3**	**4.E-05** *
MCP CUMULATIVE RISK LIMITS FOR IMMINENT HAZARDS:				**10**	**1.E-05**

TABLE 15
CALCULATION OF HAZARD INDICES AND RISK ESTIMATES

Former Creese & Cook Disposal Site
25 Clinton Avenue
Danvers, Massachusetts

RECEPTOR:	Trespasser/Recreational Receptor
EXPOSURE POINT:	Site
EXPOSURE PATHWAY:	Dermal Contact with Soil

Noncancer Effects							
Chemical of Potential Concern	CAS No.	Exposure Point Concentration (EPC) mg/kg	Noncancer Exposure Factor (EF)	Dermal Relative Absorption Factor (RAF) unitless	Average Daily Dose (ADD) mg/kg-day	Chronic Dermal Reference Dose (RfD) mg/kg-day	Hazard Quotient (HQ)
Dioxins							
2,3,7,8-TCDD	1746-01-6	6.14E-06	2.38E-06	2.00E-01	2.92E-12	--	NC
1,2,3,7,8-PeCDD	40321-76-4	1.17E-05	2.38E-06	2.00E-01	5.54E-12	--	NC
1,2,3,4,7,8-HxCDD	39227-28-6	3.03E-05	2.38E-06	2.00E-01	1.44E-11	--	NC
1,2,3,6,7,8-HxCDD	57653-85-7	4.41E-04	2.38E-06	2.00E-01	2.10E-10	--	NC
1,2,3,7,8,9-HxCDD	19408-74-3	9.79E-05	2.38E-06	2.00E-01	4.66E-11	--	NC
2,3,7,8-TCDF	51207-31-9	1.50E-06	2.38E-06	2.00E-01	7.13E-13	--	NC
1,2,3,7,8-PeCDF	57117-41-6	1.60E-06	2.38E-06	2.00E-01	7.60E-13	--	NC
2,3,4,7,8-PeCDF	57117-31-4	5.06E-06	2.38E-06	2.00E-01	2.41E-12	--	NC
1,2,3,4,7,8-HxCDF		3.00E-05	2.38E-06	2.00E-01	1.43E-11	--	NC
1,2,3,6,7,8-HxCDF		1.46E-05	2.38E-06	2.00E-01	6.96E-12	--	NC
2,3,4,6,7,8-HxCDF		8.48E-05	2.38E-06	2.00E-01	4.03E-11	--	NC
1,2,3,7,8,9-HxCDF		4.22E-06	2.38E-06	2.00E-01	2.01E-12	--	NC
1,2,3,4,7,8-HpCDF		1.69E-03	2.38E-06	2.00E-01	8.05E-10	--	NC
1,2,3,4,7,8,9-HpCDF		4.51E-05	2.38E-06	2.00E-01	2.14E-11	--	NC
OCDF		5.65E-03	2.38E-06	2.00E-01	2.69E-09	--	NC
1,2,3,4,6,7,8-HpCDD	35822-46-9	1.82E-02	2.38E-06	2.00E-01	8.65E-09	--	NC
OCDD		2.04E-01	2.38E-06	2.00E-01	9.69E-08	--	NC
Inorganics							
Arsenic	7440-38-2	4.60E+01	2.38E-06	3.00E-02	3.28E-06	3.00E-04	1.09E-02
Lead	7439-92-1	6.13E+01	2.38E-06	6.00E-03	8.74E-07	7.50E-04	1.17E-03
Chromium VI	18540-29-9	2.29E+01	2.38E-06	9.00E-02	4.90E-06	3.00E-03	1.63E-03
CUMULATIVE HAZARD INDEX							1.37E-02

Average Daily Dose (ADD) = EPC * EF * RAF
Hazard Quotient (HQ_{case}) = ADD / RfD
Cumulative Hazard Index (HI) = ΣHQ_{case}

Cancer Effects							
Chemical of Potential Concern	CAS No.	Exposure Point Concentration (EPC) mg/kg	Cancer Exposure Factor (EF)	Dermal Relative Absorption Factor (RAF)	Lifetime Average Daily Dose (LADD) mg/kg-day	Dermal Cancer Slope Factor (CSF) $(mg/kg\text{-}day)^{-1}$	Excess Lifetime Cancer Risk (ELCR)
Dioxins							
2,3,7,8-TCDD	1746-01-6	6.14E-06	1.70E-07	2.00E-01	2.09E-13	1.50E+05	3.13E-08
1,2,3,7,8-PeCDD	40321-76-4	1.17E-05	1.70E-07	2.00E-01	3.96E-13	7.50E+04	2.97E-08
1,2,3,4,7,8-HxCDD	39227-28-6	3.03E-05	1.70E-07	2.00E-01	1.03E-12	1.50E+04	1.55E-08
1,2,3,6,7,8-HxCDD	57653-85-7	4.41E-04	1.70E-07	2.00E-01	1.50E-11	1.50E+04	2.25E-07
1,2,3,7,8,9-HxCDD	19408-74-3	9.79E-05	1.70E-07	2.00E-01	3.33E-12	1.50E+04	4.99E-08
2,3,7,8-TCDF	51207-31-9	1.50E-06	1.70E-07	2.00E-01	5.09E-14	1.50E+04	7.64E-10
1,2,3,7,8-PeCDF	57117-41-6	1.60E-06	1.70E-07	2.00E-01	5.43E-14	7.50E+04	4.07E-09
2,3,4,7,8-PeCDF	57117-31-4	5.06E-06	1.70E-07	2.00E-01	1.72E-13	7.50E+04	1.29E-08
1,2,3,4,7,8-HxCDF		3.00E-05	1.70E-07	2.00E-01	1.02E-12	1.50E+04	1.53E-08
1,2,3,6,7,8-HxCDF		1.46E-05	1.70E-07	2.00E-01	4.97E-13	1.50E+04	7.45E-09
2,3,4,6,7,8-HxCDF		8.48E-05	1.70E-07	2.00E-01	2.88E-12	1.50E+04	4.32E-08
1,2,3,7,8,9-HxCDF		4.22E-06	1.70E-07	2.00E-01	1.43E-13	1.50E+04	2.15E-09
1,2,3,4,7,8-HpCDF		1.69E-03	1.70E-07	2.00E-01	5.75E-11	1.50E+04	8.63E-07
1,2,3,4,7,8,9-HpCDF		4.51E-05	1.70E-07	2.00E-01	1.53E-12	1.50E+04	2.30E-08
OCDF		5.65E-03	1.70E-07	2.00E-01	1.92E-10	1.50E+02	2.88E-08
1,2,3,4,6,7,8-HpCDD	35822-46-9	1.82E-02	1.70E-07	2.00E-01	6.18E-10	1.50E+04	9.27E-06
OCDD		2.04E-01	1.70E-07	2.00E-01	6.92E-09	1.50E+02	1.04E-06
Inorganics							
Arsenic	7440-38-2	4.60E+01	1.70E-07	3.00E-02	2.34E-07	1.50E+00	3.52E-07
Lead	7439-92-1	6.13E+01	1.70E-07	6.00E-03	6.24E-08	--	NC
Chromium VI	18540-29-9	2.29E+01	1.70E-07	9.00E-02	3.50E-07	--	NC
CUMULATIVE ELCR							1.20E-05

Lifetime Average Daily Dose (LADD) = EPC * EF * RAF
Excess Lifetime Cancer Risk ($ELCR_{case}$) = LADD * CSF
Cumulative ELCR = $\Sigma ELCR_{case}$

NC = Not calculated due to lack of information.

TABLE 16
CALCULATION OF HAZARD INDICES AND RISK ESTIMATES

Former Creese & Cook Disposal Site
25 Clinton Avenue
Danvers, Massachusetts

RECEPTOR:	Trespasser/Recreational Receptor
EXPOSURE POINT:	Site
EXPOSURE PATHWAY:	Incidental Ingestion of Soil

Noncancer Effects

Chemical of Potential Concern	CAS No.	Exposure Point Concentration (EPC) mg/kg	Noncancer Exposure Factor (EF)	Oral Relative Absorption Factor (RAF) unitless	Average Daily Dose (ADD) mg/kg-day	Chronic Oral Reference Dose (RfD) mg/kg-day	Hazard Quotient (HQ)
Dioxins							
2,3,7,8-TCDD	1746-01-6	6.14E-06	4.56E-07	1.00E+00	2.80E-12	--	NC
1,2,3,7,8-PeCDD	40321-76-4	1.17E-05	4.56E-07	1.00E+00	5.31E-12	--	NC
1,2,3,4,7,8-HxCDD	39227-28-6	3.03E-05	4.56E-07	1.00E+00	1.38E-11	--	NC
1,2,3,6,7,8-HxCDD	57653-85-7	4.41E-04	4.56E-07	1.00E+00	2.01E-10	--	NC
1,2,3,7,8,9-HxCDD	19408-74-3	9.79E-05	4.56E-07	1.00E+00	4.46E-11	--	NC
2,3,7,8-TCDF	51207-31-9	1.50E-06	4.56E-07	1.00E+00	6.84E-13	--	NC
1,2,3,7,8-PeCDF	57117-41-6	1.60E-06	4.56E-07	1.00E+00	7.29E-13	--	NC
2,3,4,7,8-PeCDF	57117-31-4	5.06E-06	4.56E-07	1.00E+00	2.31E-12	--	NC
1,2,3,4,7,8-HxCDF		3.00E-05	4.56E-07	1.00E+00	1.37E-11	--	NC
1,2,3,6,7,8-HxCDF		1.46E-05	4.56E-07	1.00E+00	6.67E-12	--	NC
2,3,4,6,7,8-HxCDF		8.48E-05	4.56E-07	1.00E+00	3.87E-11	--	NC
1,2,3,7,8,9-HxCDF		4.22E-06	4.56E-07	1.00E+00	1.92E-12	--	NC
1,2,3,4,7,8-HpCDF		1.69E-03	4.56E-07	1.00E+00	7.72E-10	--	NC
1,2,3,4,7,8,9-HpCDF		4.51E-05	4.56E-07	1.00E+00	2.06E-11	--	NC
OCDF		5.65E-03	4.56E-07	1.00E+00	2.58E-09	--	NC
1,2,3,4,6,7,8-HpCDD	35822-46-9	1.82E-02	4.56E-07	1.00E+00	8.29E-09	--	NC
OCDD		2.04E-01	4.56E-07	1.00E+00	9.29E-08	--	NC
Inorganics							
Arsenic	7440-38-2	4.60E+01	4.56E-07	1.00E+00	2.10E-05	3.00E-04	6.99E-02
Lead	7439-92-1	6.13E+01	4.56E-07	5.00E-01	1.40E-05	7.50E-04	1.86E-02
Chromium VI	18540-29-9	2.29E+01	4.56E-07	1.00E+00	1.04E-05	3.00E-03	3.48E-03
CUMULATIVE HAZARD INDEX							9.20E-02

Average Daily Dose (ADD) = EPC * EF * RAF
Hazard Quotient ($HQ_{noncancer}$) = ADD / RfD
Cumulative Hazard Index (HI) = Σ $HQ_{noncancer}$

Cancer Effects

Chemical of Potential Concern	CAS No.	Exposure Point Concentration (EPC) mg/kg	Cancer Exposure Factor (EF)	Oral Relative Absorption Factor (RAF)	Lifetime Average Daily Dose (LADD) mg/kg-day	Oral Cancer Slope Factor (CSF) $(mg/kg\text{-}day)^{-1}$	Excess Lifetime Cancer Risk (ELCR)
Dioxins							
2,3,7,8-TCDD	1746-01-6	6.14E-06	3.26E-08	1.00E+00	2.00E-13	1.50E+05	3.00E-08
1,2,3,7,8-PeCDD	40321-76-4	1.17E-05	3.26E-08	1.00E+00	3.79E-13	7.50E+04	2.85E-08
1,2,3,4,7,8-HxCDD	39227-28-6	3.03E-05	3.26E-08	1.00E+00	9.88E-13	1.50E+04	1.48E-08
1,2,3,6,7,8-HxCDD	57653-85-7	4.41E-04	3.26E-08	1.00E+00	1.44E-11	1.50E+04	2.15E-07
1,2,3,7,8,9-HxCDD	19408-74-3	9.79E-05	3.26E-08	1.00E+00	3.19E-12	1.50E+04	4.78E-08
2,3,7,8-TCDF	51207-31-9	1.50E-06	3.26E-08	1.00E+00	4.88E-14	1.50E+04	7.32E-10
1,2,3,7,8-PeCDF	57117-41-6	1.60E-06	3.26E-08	1.00E+00	5.21E-14	7.50E+04	3.90E-09
2,3,4,7,8-PeCDF	57117-31-4	5.06E-06	3.26E-08	1.00E+00	1.65E-13	7.50E+04	1.24E-08
1,2,3,4,7,8-HxCDF		3.00E-05	3.26E-08	1.00E+00	9.76E-13	1.50E+04	1.46E-08
1,2,3,6,7,8-HxCDF		1.46E-05	3.26E-08	1.00E+00	4.76E-13	1.50E+04	7.14E-09
2,3,4,6,7,8-HxCDF		8.48E-05	3.26E-08	1.00E+00	2.76E-12	1.50E+04	4.14E-08
1,2,3,7,8,9-HxCDF		4.22E-06	3.26E-08	1.00E+00	1.37E-13	1.50E+04	2.06E-09
1,2,3,4,7,8-HpCDF		1.69E-03	3.26E-08	1.00E+00	5.51E-11	1.50E+04	8.27E-07
1,2,3,4,7,8,9-HpCDF		4.51E-05	3.26E-08	1.00E+00	1.47E-12	1.50E+04	2.20E-08
OCDF		5.65E-03	3.26E-08	1.00E+00	1.84E-10	1.50E+02	2.76E-08
1,2,3,4,6,7,8-HpCDD	35822-46-9	1.82E-02	3.26E-08	1.00E+00	5.92E-10	1.50E+04	8.88E-06
OCDD		2.04E-01	3.26E-08	1.00E+00	6.64E-09	1.50E+02	9.95E-07
Inorganics							
Arsenic	7440-38-2	4.60E+01	3.26E-08	1.00E+00	1.50E-06	1.50E+00	2.25E-06
Lead	7439-92-1	6.13E+01	3.26E-08	5.00E-01	9.97E-07	--	NC
Chromium VI	18540-29-9	2.29E+01	3.26E-08	1.00E+00	7.45E-07	--	NC
CUMULATIVE ELCR							1.34E-05

Lifetime Average Daily Dose (LADD) = EPC * EF * RAF
Excess Lifetime Cancer Risk ($ELCR_{cancer}$) = LADD * CSF
Cumulative ELCR = $\Sigma ELCR_{cancer}$

NC = Not calculated due to lack of information.

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TABLE 17
CALCULATION OF HAZARD INDICES AND RISK ESTIMATES

Former Creese & Cook Disposal Site
25 Clinton Avenue
Danvers, Massachusetts

RECEPTOR:	Trespasser/Recreational Receptor
EXPOSURE POINT:	Site
EXPOSURE PATHWAY:	Inhalation of Fugitive Dust

Noncancer Effects

Chemical of Potential Concern	CAS No.	Exposure Point Concentration (EPC) mg/m³	Noncancer Exposure Factor (EF)	Average Daily Exposure (ADE) mg/m³	Chronic inhalation Reference Concentration (RfC) mg/m³	Hazard Quotient (HQ)
Dioxins						
2,3,7,8-TCDD	1746-01-6	1.96E-13	1.04E-02	2.04E-15	--	NC
1,2,3,7,8-PeCDD	40321-76-4	3.73E-13	1.04E-02	3.87E-15	--	NC
1,2,3,4,7,8-HxCDD	39227-28-6	9.71E-13	1.04E-02	1.01E-14	--	NC
1,2,3,6,7,8-HxCDD	57653-85-7	1.41E-11	1.04E-02	1.47E-13	--	NC
1,2,3,7,8,9-HxCDD	19408-74-3	3.13E-12	1.04E-02	3.25E-14	--	NC
2,3,7,8-TCDF	51207-31-9	4.80E-14	1.04E-02	4.99E-16	--	NC
1,2,3,7,8-PeCDF	57117-41-6	5.12E-14	1.04E-02	5.32E-16	--	NC
2,3,4,7,8-PeCDF	57117-31-4	1.62E-13	1.04E-02	1.68E-15	--	NC
1,2,3,4,7,8-HxCDF		9.59E-13	1.04E-02	9.97E-15	--	NC
1,2,3,6,7,8-HxCDF		4.68E-13	1.04E-02	4.86E-15	--	NC
2,3,4,6,7,8-HxCDF		2.71E-12	1.04E-02	2.82E-14	--	NC
1,2,3,7,8,9-HxCDF		1.35E-13	1.04E-02	1.40E-15	--	NC
1,2,3,4,7,8-HpCDF		5.42E-11	1.04E-02	5.63E-13	--	NC
1,2,3,4,7,8,9-HpCDF		1.44E-12	1.04E-02	1.50E-14	--	NC
OCDF		1.81E-10	1.04E-02	1.88E-12	--	NC
1,2,3,4,6,7,8-HpCDD	35822-46-9	5.82E-10	1.04E-02	6.05E-12	--	NC
OCDD		6.52E-09	1.04E-02	6.78E-11	--	NC
Inorganics						
Arsenic	7440-38-2	1.47E-06	1.04E-02	1.53E-08	2.50E-06	6.12E-03
Lead	7439-92-1	1.96E-06	1.04E-02	2.04E-08	1.00E-03	2.04E-05
Chromium VI	18540-29-9	7.32E-07	1.04E-02	7.61E-09	1.00E-04	7.61E-05
CUMULATIVE HAZARD INDEX						6.21E-03

Average Daily Dose (ADD) = EPC * EF
Hazard Quotient (HQ_{case}) = ADE / RfC
Cumulative Hazard Index (HI) = Σ HQ_{case}

Cancer Effects

Chemical of Potential Concern	CAS No.	Exposure Point Concentration (EPC) mg/m³	Cancer Exposure Factor (EF)	Lifetime Average Daily Dose (LADE) mg/m³	Inhalation Unit Risk (IUR) (mg/m³)⁻¹	Excess Lifetime Cancer Risk (ELCR)
Dioxins						
2,3,7,8-TCDD	1746-01-6	1.96E-13	7.42E-04	1.46E-16	3.30E+05	4.81E-11
1,2,3,7,8-PeCDD	40321-76-4	3.73E-13	7.42E-04	2.77E-16	1.65E+05	4.57E-11
1,2,3,4,7,8-HxCDD	39227-28-6	9.71E-13	7.42E-04	7.20E-16	3.30E+04	2.38E-11
1,2,3,6,7,8-HxCDD	57653-85-7	1.41E-11	7.42E-04	1.05E-14	1.65E+04	1.73E-10
1,2,3,7,8,9-HxCDD	19408-74-3	3.13E-12	7.42E-04	2.32E-15	3.30E+03	7.67E-12
2,3,7,8-TCDF	51207-31-9	4.80E-14	7.42E-04	3.56E-17	1.65E+03	5.88E-14
1,2,3,7,8-PeCDF	57117-41-6	5.12E-14	7.42E-04	3.80E-17	1.65E+03	6.27E-14
2,3,4,7,8-PeCDF	57117-31-4	1.62E-13	7.42E-04	1.20E-16	8.25E+02	9.91E-14
1,2,3,4,7,8-HxCDF		9.59E-13	7.42E-04	7.12E-16	1.65E+02	1.17E-13
1,2,3,6,7,8-HxCDF		4.68E-13	7.42E-04	3.47E-16	8.25E+01	2.87E-14
2,3,4,6,7,8-HxCDF		2.71E-12	7.42E-04	2.01E-15	1.65E+01	3.32E-14
1,2,3,7,8,9-HxCDF		1.35E-13	7.42E-04	1.00E-16	8.25E+00	8.27E-16
1,2,3,4,7,8-HpCDF		5.42E-11	7.42E-04	4.02E-14	1.65E+00	6.63E-14
1,2,3,4,7,8,9-HpCDF		1.44E-12	7.42E-04	1.07E-15	8.25E-01	8.84E-16
OCDF		1.81E-10	7.42E-04	1.34E-13	1.65E-03	2.21E-16
1,2,3,4,6,7,8-HpCDD	35822-46-9	5.82E-10	7.42E-04	4.32E-13	8.25E-02	3.56E-14
OCDD		6.52E-09	7.42E-04	4.84E-12	1.65E-06	7.99E-18
Inorganics						
Arsenic	7440-38-2	1.47E-06	7.42E-04	1.09E-09	4.30E+00	4.70E-09
Lead	7439-92-1	1.96E-06	7.42E-04	1.45E-09	--	NC
Chromium VI	18540-29-9	7.32E-07	7.42E-04	5.43E-10	1.20E+01	6.52E-09
CUMULATIVE ELCR						1.15E-08

Lifetime Average Daily Dose (LADE) = EPC * EF
Excess Lifetime Cancer Risk ($ELCR_{case}$) = LADE * CSF
Cumulative ELCR = Σ$ELCR_{case}$
NC = Not calculated due to lack of information.

TABLE 18
CALCULATION OF HAZARD INDICES AND RISK ESTIMATES

Former Creese & Cook Disposal Site
ADDRESS
Danvers, Massachusetts

RECEPTOR:	Trespasser/Recreational Receptor
EXPOSURE POINT:	Site
EXPOSURE PATHWAY:	Dermal Contact with Sediment

Noncancer Effects

Chemical of Potential Concern	CAS No.	Exposure Point Concentration (EPC) mg/kg	Noncancer Exposure Factor (EF)	Dermal Relative Absorption Factor (RAF) unitless	Average Daily Dose (ADD) mg/kg-day	Chronic Dermal Reference Dose (RfD) mg/kg-day	Hazard Quotient (HQ)
Dioxins							
2,3,7,8-TCDD	1746-01-6	3.28E-06	1.82E-05	2.00E-01	1.20E-11	--	NC
1,2,3,7,8-PeCDD	40321-76-4	8.87E-06	1.82E-05	2.00E-01	3.23E-11	--	NC
1,2,3,4,7,8-HxCDD	39227-28-6	1.60E-05	1.82E-05	2.00E-01	5.82E-11	--	NC
1,2,3,6,7,8-HxCDD	57653-85-7	9.24E-05	1.82E-05	2.00E-01	3.37E-10	--	NC
1,2,3,7,8,9-HxCDD	19408-74-3	3.77E-05	1.82E-05	2.00E-01	1.37E-10	--	NC
2,3,7,8-TCDF	51207-31-9	9.12E-06	1.82E-05	2.00E-01	3.32E-11	--	NC
1,2,3,7,8-PeCDF	57117-41-6	3.77E-06	1.82E-05	2.00E-01	1.37E-11	--	NC
2,3,4,7,8-PeCDF	57117-31-4	1.48E-05	1.82E-05	2.00E-01	5.38E-11	--	NC
1,2,3,4,7,8-HxCDF		2.15E-05	1.82E-05	2.00E-01	7.84E-11	--	NC
1,2,3,6,7,8-HxCDF		1.46E-05	1.82E-05	2.00E-01	5.31E-11	--	NC
2,3,4,6,7,8-HxCDF		2.52E-05	1.82E-05	2.00E-01	9.19E-11	--	NC
1,2,3,7,8,9-HxCDF		3.22E-06	1.82E-05	2.00E-01	1.17E-11	--	NC
1,2,3,4,7,8-HpCDF		4.48E-04	1.82E-05	2.00E-01	1.63E-09	--	NC
1,2,3,4,7,8,9-HpCDF		1.84E-05	1.82E-05	2.00E-01	6.72E-11	--	NC
OCDF		8.63E-04	1.82E-05	2.00E-01	3.14E-09	--	NC
1,2,3,4,6,7,8-HpCDD	35822-46-9	2.00E-03	1.82E-05	2.00E-01	7.28E-09	--	NC
OCDD		1.73E-02	1.82E-05	2.00E-01	6.31E-08	--	NC
Inorganics							
Arsenic	7440-38-2	6.19E+01	1.82E-05	3.00E-02	3.38E-05	3.00E-04	1.13E-01
Lead	7439-92-1	6.45E+01	1.82E-05	6.00E-03	7.05E-06	7.50E-04	9.40E-03
Chromium VI	18540-29-9	9.66E+00	1.82E-05	9.00E-02	1.58E-05	3.00E-03	5.27E-03
CUMULATIVE HAZARD INDEX							1.27E-01

Average Daily Dose (ADD) = EPC * EF * RAF
Hazard Quotient (HQ_{route}) = ADD / RfD
Cumulative Hazard Index (HI) = Σ HQ_{route}

Cancer Effects

Chemical of Potential Concern	CAS No.	Exposure Point Concentration (EPC) mg/kg	Cancer Exposure Factor (EF)	Dermal Relative Absorption Factor (RAF)	Lifetime Average Daily Dose (LADD) mg/kg-day	Dermal Cancer Slope Factor (CSF) $(mg/kg\text{-}day)^{-1}$	Excess Lifetime Cancer Risk (ELCR)
Dioxins							
2,3,7,8-TCDD	1746-01-6	3.28E-06	1.30E-06	2.00E-01	8.54E-13	1.50E+05	1.28E-07
1,2,3,7,8-PeCDD	40321-76-4	8.87E-06	1.30E-06	2.00E-01	2.31E-12	7.50E+04	1.73E-07
1,2,3,4,7,8-HxCDD	39227-28-6	1.60E-05	1.30E-06	2.00E-01	4.16E-12	1.50E+04	6.24E-08
1,2,3,6,7,8-HxCDD	57653-85-7	9.24E-05	1.30E-06	2.00E-01	2.40E-11	1.50E+04	3.61E-07
1,2,3,7,8,9-HxCDD	19408-74-3	3.77E-05	1.30E-06	2.00E-01	9.81E-12	1.50E+04	1.47E-07
2,3,7,8-TCDF	51207-31-9	9.12E-06	1.30E-06	2.00E-01	2.37E-12	1.50E+04	3.56E-08
1,2,3,7,8-PeCDF	57117-41-6	3.77E-06	1.30E-06	2.00E-01	9.82E-13	7.50E+04	7.36E-08
2,3,4,7,8-PeCDF	57117-31-4	1.48E-05	1.30E-06	2.00E-01	3.84E-12	7.50E+04	2.88E-07
1,2,3,4,7,8-HxCDF		2.15E-05	1.30E-06	2.00E-01	5.60E-12	1.50E+04	8.39E-08
1,2,3,6,7,8-HxCDF		1.46E-05	1.30E-06	2.00E-01	3.79E-12	1.50E+04	5.68E-08
2,3,4,6,7,8-HxCDF		2.52E-05	1.30E-06	2.00E-01	6.57E-12	1.50E+04	9.85E-08
1,2,3,7,8,9-HxCDF		3.22E-06	1.30E-06	2.00E-01	8.38E-13	1.50E+04	1.26E-08
1,2,3,4,7,8-HpCDF		4.48E-04	1.30E-06	2.00E-01	1.17E-10	1.50E+04	1.75E-06
1,2,3,4,7,8,9-HpCDF		1.84E-05	1.30E-06	2.00E-01	4.80E-12	1.50E+04	7.20E-08
OCDF		8.63E-04	1.30E-06	2.00E-01	2.24E-10	1.50E+02	3.37E-08
1,2,3,4,6,7,8-HpCDD	35822-46-9	2.00E-03	1.30E-06	2.00E-01	5.20E-10	1.50E+04	7.80E-06
OCDD		1.73E-02	1.30E-06	2.00E-01	4.51E-09	1.50E+02	6.76E-07
Inorganics							
Arsenic	7440-38-2	6.19E+01	1.30E-06	3.00E-02	2.41E-06	1.50E+00	3.62E-06
Lead	7439-92-1	6.45E+01	1.30E-06	6.00E-03	5.03E-07	--	NC
Chromium VI	18540-29-9	9.66E+00	1.30E-06	9.00E-02	1.13E-06	--	NC
CUMULATIVE ELCR							1.55E-05

Lifetime Average Daily Dose (LADD) = EPC * EF * RAF
Excess Lifetime Cancer Risk ($ELCR_{route}$) = LADD * CSF
Cumulative ELCR = Σ$ELCR_{route}$
NC = Not calculated due to lack of information.

TABLE 19
CALCULATION OF HAZARD INDICES AND RISK ESTIMATES

Former Creese & Cook Disposal Site
25 Clinton Avenue
Danvers, Massachusetts

RECEPTOR:	Trespasser/Recreational Receptor
EXPOSURE POINT:	Site
EXPOSURE PATHWAY:	Incidental Ingestion of Sediment

Noncancer Effects

Chemical of Potential Concern	CAS No.	Exposure Point Concentration (EPC) mg/kg	Noncancer Exposure Factor (EF)	Oral Relative Absorption Factor (RAF) unitless	Average Daily Dose (ADD) mg/kg-day	Chronic Oral Reference Dose (RfD) mg/kg-day	Hazard Quotient (HQ)
Dioxins							
2,3,7,8-TCDD	1746-01-6	3.28E-06	3.06E-07	1.00E+00	1.00E-12	--	NC
1,2,3,7,8-PeCDD	40321-76-4	8.87E-06	3.06E-07	1.00E+00	2.71E-12	--	NC
1,2,3,4,7,8-HxCDD	39227-28-6	1.60E-05	3.06E-07	1.00E+00	4.88E-12	--	NC
1,2,3,6,7,8-HxCDD	57653-85-7	9.24E-05	3.06E-07	1.00E+00	2.82E-11	--	NC
1,2,3,7,8,9-HxCDD	19408-74-3	3.77E-05	3.06E-07	1.00E+00	1.15E-11	--	NC
2,3,7,8-TCDF	51207-31-9	9.12E-06	3.06E-07	1.00E+00	2.79E-12	--	NC
1,2,3,7,8-PeCDF	57117-41-6	3.77E-06	3.06E-07	1.00E+00	1.15E-12	--	NC
2,3,4,7,8-PeCDF	57117-31-4	1.48E-05	3.06E-07	1.00E+00	4.51E-12	--	NC
1,2,3,4,7,8-HxCDF		2.15E-05	3.06E-07	1.00E+00	6.57E-12	--	NC
1,2,3,6,7,8-HxCDF		1.46E-05	3.06E-07	1.00E+00	4.45E-12	--	NC
2,3,4,6,7,8-HxCDF		2.52E-05	3.06E-07	1.00E+00	7.71E-12	--	NC
1,2,3,7,8,9-HxCDF		3.22E-06	3.06E-07	1.00E+00	9.84E-13	--	NC
1,2,3,4,7,8-HpCDF		4.48E-04	3.06E-07	1.00E+00	1.37E-10	--	NC
1,2,3,4,7,8,9-HpCDF		1.84E-05	3.06E-07	1.00E+00	5.64E-12	--	NC
OCDF		8.63E-04	3.06E-07	1.00E+00	2.64E-10	--	NC
1,2,3,4,6,7,8-HpCDD	35822-46-9	2.00E-03	3.06E-07	1.00E+00	6.10E-10	--	NC
OCDD		1.73E-02	3.06E-07	1.00E+00	5.30E-09	--	NC
Inorganics							
Arsenic	7440-38-2	6.19E+01	3.06E-07	1.00E+00	1.89E-05	3.00E-04	6.30E-02
Lead	7439-92-1	6.45E+01	3.06E-07	5.00E-01	9.85E-06	7.50E-04	1.31E-02
Chromium VI	18540-29-9	9.66E+00	3.06E-07	1.00E+00	2.95E-06	3.00E-03	9.83E-04
CUMULATIVE HAZARD INDEX							7.71E-02

Average Daily Dose (ADD) = EPC * EF * RAF
Hazard Quotient (HQ_{exp}) = ADD / RfD
Cumulative Hazard Index (HI) = ΣHQ_{exp}

Cancer Effects

Chemical of Potential Concern	CAS No.	Exposure Point Concentration (EPC) mg/kg	Cancer Exposure Factor (EF)	Oral Relative Absorption Factor (RAF)	Lifetime Average Daily Dose (LADD) mg/kg-day	Oral Cancer Slope Factor (CSF) $(mg/kg\text{-}day)^{-1}$	Excess Lifetime Cancer Risk (ELCR)
Dioxins							
2,3,7,8-TCDD	1746-01-6	3.28E-06	2.18E-08	1.00E+00	7.16E-14	1.50E+05	1.07E-08
1,2,3,7,8-PeCDD	40321-76-4	8.87E-06	2.18E-08	1.00E+00	1.94E-13	7.50E+04	1.45E-08
1,2,3,4,7,8-HxCDD	39227-28-6	1.60E-05	2.18E-08	1.00E+00	3.49E-13	1.50E+04	5.23E-09
1,2,3,6,7,8-HxCDD	57653-85-7	9.24E-05	2.18E-08	1.00E+00	2.02E-12	1.50E+04	3.03E-08
1,2,3,7,8,9-HxCDD	19408-74-3	3.77E-05	2.18E-08	1.00E+00	8.23E-13	1.50E+04	1.23E-08
2,3,7,8-TCDF	51207-31-9	9.12E-06	2.18E-08	1.00E+00	1.99E-13	1.50E+04	2.99E-09
1,2,3,7,8-PeCDF	57117-41-6	3.77E-06	2.18E-08	1.00E+00	8.23E-14	7.50E+04	6.18E-09
2,3,4,7,8-PeCDF	57117-31-4	1.48E-05	2.18E-08	1.00E+00	3.22E-13	7.50E+04	2.42E-08
1,2,3,4,7,8-HxCDF		2.15E-05	2.18E-08	1.00E+00	4.70E-13	1.50E+04	7.04E-09
1,2,3,6,7,8-HxCDF		1.46E-05	2.18E-08	1.00E+00	3.18E-13	1.50E+04	4.77E-09
2,3,4,6,7,8-HxCDF		2.52E-05	2.18E-08	1.00E+00	5.51E-13	1.50E+04	8.26E-09
1,2,3,7,8,9-HxCDF		3.22E-06	2.18E-08	1.00E+00	7.03E-14	1.50E+04	1.05E-09
1,2,3,4,7,8-HpCDF		4.48E-04	2.18E-08	1.00E+00	9.78E-12	1.50E+04	1.47E-07
1,2,3,4,7,8,9-HpCDF		1.84E-05	2.18E-08	1.00E+00	4.03E-13	1.50E+04	6.04E-09
OCDF		8.63E-04	2.18E-08	1.00E+00	1.88E-11	1.50E+02	2.82E-09
1,2,3,4,6,7,8-HpCDD	35822-46-9	2.00E-03	2.18E-08	1.00E+00	4.36E-11	1.50E+04	6.54E-07
OCDD		1.73E-02	2.18E-08	1.00E+00	3.78E-10	1.50E+02	5.68E-08
Inorganics							
Arsenic	7440-38-2	6.19E+01	2.18E-08	1.00E+00	1.35E-06	1.50E+00	2.03E-06
Lead	7439-92-1	6.45E+01	2.18E-08	5.00E-01	7.04E-07	--	NC
Chromium VI	18540-29-9	9.66E+00	2.18E-08	1.00E+00	2.11E-07	--	NC
CUMULATIVE ELCR							3.02E-06

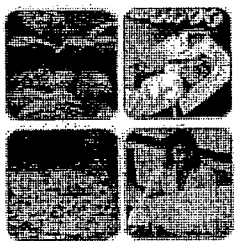
Lifetime Average Daily Dose (LADD) = EPC * EF * RAF
Excess Lifetime Cancer Risk ($ELCR_{exp}$) = LADD * CSF
Cumulative ELCR = $\Sigma ELCR_{exp}$

NC = Not calculated due to lack of information.

New England ACCUTEST Laboratories

IT'S ALL IN THE CHEMISTRY

12/26/06



Technical Report for

Woodard & Curran

Creese + Cook Danvers MA

210667

Accutest Job Number: M61007

Sampling Dates: 11/21/06 - 11/22/06

Report to:

Woodard & Curran

dmacdonald@woodardcurran.com

ATTN: Dave MacDonald

Total number of pages in report: **89**

ACCUTEST LABORATORIES 50 YEARS 1956-2006

ACCREDITED IN ACCORDANCE WITH THE nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Reza Tand
Lab Director

Certifications: MA (M-MA136) CT (PH-0109) NH (250204) RI (00071) ME (MA136) FL (E87579) NY (23346) NJ (MA926) NAVY USACE

Sections: 1 2 3 4

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Sample Summary

Woodard & Curran

Job No: M61007

Creese + Cook Danvers MA
Project No: 210667

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
M61007-1	11/21/06	15:20	AW	11/22/06	SO	Sediment	WC-SED-18
M61007-2	11/21/06	15:00	AW	11/22/06	SO	Sediment	WC-SED-20
M61007-3	11/22/06	06:50	AW	11/22/06	SO	Sediment	WC-SED-19
M61007-4	11/22/06	07:15	AW	11/22/06	SO	Sediment	WC-SED-17
M61007-5	11/22/06	07:20	AW	11/22/06	SO	Sediment	WC-SED-13
M61007-6	11/22/06	07:30	AW	11/22/06	SO	Sediment	WC-SED-11
M61007-7	11/22/06	07:40	AW	11/22/06	SO	Sediment	WC-SED-9
M61007-8	11/22/06	07:50	AW	11/22/06	SO	Sediment	WC-SED-7
M61007-9	11/22/06	08:00	AW	11/22/06	SO	Sediment	WC-SED-3
M61007-10	11/22/06	08:50	AW	11/22/06	SO	Sediment	WC-SED-12
M61007-11	11/22/06	08:55	AW	11/22/06	SO	Sediment	WC-SED-10
M61007-12	11/21/06	09:10	AW	11/22/06	SO	Soil	WC-41
M61007-13	11/21/06	09:25	AW	11/22/06	SO	Soil	WC-42

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Woodard & Curran

Job No: M61007

Creese + Cook Danvers MA
Project No: 210667

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
M61007-14	11/21/06	09:30	AW	11/22/06	SO	Soil	WC-43
M61007-15	11/21/06	10:10	AW	11/22/06	SO	Soil	WC-16
M61007-16	11/21/06	10:20	AW	11/22/06	SO	Soil	WC-15
M61007-17	11/21/06	10:35	AW	11/22/06	SO	Soil	WC-14
M61007-18	11/21/06	10:40	AW	11/22/06	SO	Soil	WC-13
M61007-19	11/21/06	11:00	AW	11/22/06	SO	Soil	WC-1
M61007-20	11/21/06	11:05	AW	11/22/06	SO	Soil	WC-2
M61007-21	11/21/06	11:10	AW	11/22/06	SO	Soil	WC-3
M61007-22	11/21/06	11:15	AW	11/22/06	SO	Soil	WC-4
M61007-23	11/21/06	11:20	AW	11/22/06	SO	Soil	WC-5
M61007-24	11/21/06	11:25	AW	11/22/06	SO	Soil	WC-6
M61007-25	11/21/06	11:30	AW	11/22/06	SO	Soil	WC-7
M61007-26	11/21/06	11:35	AW	11/22/06	SO	Soil	WC-8

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Woodard & Curran

Job No: M61007

Creese + Cook Danvers MA
Project No: 210667

Sample Number	Collected Date	Time By	Received	Matrix Code	Matrix Type	Client Sample ID
M61007-27	11/21/06	11:40 AW	11/22/06	SO	Soil	WC-9
M61007-28	11/21/06	11:45 AW	11/22/06	SO	Soil	WC-10
M61007-29	11/21/06	11:50 AW	11/22/06	SO	Soil	WC-11
M61007-30	11/21/06	11:55 AW	11/22/06	SO	Soil	WC-12
M61007-31	11/21/06	14:55 AW	11/22/06	SO	Sediment	WC-SED-14
M61007-32	11/21/06	15:10 AW	11/22/06	SO	Sediment	WC-SED-15
M61007-33	11/21/06	15:15 AW	11/22/06	SO	Sediment	WC-SED-16
M61007-34	11/22/06	09:00 AW	11/22/06	SO	Sediment	WC-SED-8
M61007-35	11/22/06	09:10 AW	11/22/06	SO	Sediment	WC-SED-6
M61007-36	11/22/06	09:25 AW	11/22/06	SO	Sediment	WC-SED-5
M61007-37	11/22/06	09:35 AW	11/22/06	SO	Sediment	WC-SED-4
M61007-38	11/22/06	09:40 AW	11/22/06	SO	Sediment	WC-SED-2
M61007-39	11/22/06	09:45 AW	11/22/06	SO	Sediment	WC-SED-1

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Woodard & Curran

Job No: M61007

Creese + Cook Danvers MA
Project No: 210667

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
M61007-40	11/22/06	12:10	AW	11/22/06	SO	Soil	WC-101
M61007-41	11/22/06	11:00	AW	11/22/06	SO	Soil	WC-17
M61007-42	11/22/06	11:10	AW	11/22/06	SO	Soil	WC-19
M61007-43	11/22/06	11:20	AW	11/22/06	SO	Soil	WC-21
M61007-44	11/22/06	11:40	AW	11/22/06	SO	Soil	WC-25
M61007-45	11/22/06	11:30	AW	11/22/06	SO	Soil	WC-23
M61007-46	11/22/06	11:50	AW	11/22/06	SO	Soil	WC-27
M61007-47	11/22/06	11:55	AW	11/22/06	SO	Soil	WC-28
M61007-48	11/22/06	11:05	AW	11/22/06	SO	Soil	WC-18
M61007-49	11/22/06	11:45	AW	11/22/06	SO	Soil	WC-26
M61007-50	11/22/06	11:25	AW	11/22/06	SO	Soil	WC-22
M61007-51	11/22/06	11:35	AW	11/22/06	SO	Soil	WC-24
M61007-52	11/22/06	11:15	AW	11/22/06	SO	Soil	WC-20

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Woodard & Curran

Job No: M61007

Creese + Cook Danvers MA
Project No: 210667

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
M61007-53	11/22/06	12:05	AW	11/22/06	SO	Soil	WC-44

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

ACCUTEST Laboratories

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Woodard & Curran **Job No** M61007

Site: Creese + Cook Danvers MA **Report Date** 12/21/2006 5:11:22 PM

53 Sample(s) were collected on between 11/21/2006 and 11/22/2006 and were received at Accutest on 11/22/2006 properly preserved, at 2.1 Deg. C and intact. These Samples received an Accutest job number of M61007. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report. Analysis of Dioxin performed by Paradigm Analytical Labs, Inc. Data package attached.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Metals By Method SW846 6010B

Matrix SO **Batch ID:** MP9645

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M61214-3DUP, M61214-3MS, M61214-3SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic are outside control limits for sample MP9645-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Wet Chemistry By Method CORP ENG 81 M

Matrix SO **Batch ID:** GP7319

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M61158-23DUP, M61158-23MS were used as the QC samples for Total Organic Carbon.

Wet Chemistry By Method EPA 160.3 M

Matrix SO **Batch ID:** GN21331

- Sample(s) M61005-1DUP were used as the QC samples for Solids, Percent.

Matrix SO **Batch ID:** GN21341

- Sample(s) M61007-32DUP were used as the QC samples for Solids, Percent.

Matrix SO **Batch ID:** GN21345

- Sample(s) M61007-52DUP were used as the QC samples for Solids, Percent.

Matrix SO **Batch ID:** GN21348

- Sample(s) M61068-2DUP were used as the QC samples for Solids, Percent.

Wet Chemistry By Method MA DEP

Matrix SO	Batch ID: GP7305

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M61007-22DUP, M61007-22MS were used as the QC samples for PAC Cyanide.

Wet Chemistry By Method SW846 3060A/7196A

Matrix SO	Batch ID: GN21358

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M61068-2DUP, M61068-2MS were used as the QC samples for Chromium, Hexavalent.

Matrix SO	Batch ID: GN21431

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M61007-22DUP, M61007-22MS were used as the QC samples for Chromium, Hexavalent.

Matrix SO	Batch ID: GN21433

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M61007-26DUP, M61007-26MS were used as the QC samples for Chromium, Hexavalent.

Matrix SO	Batch ID: GN21435

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M61123-4DUP, M61123-4MS were used as the QC samples for Chromium, Hexavalent.

Wet Chemistry By Method SW846 9012 M

Matrix SO	Batch ID: GP7290

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M60895-8DUP, M60895-8MS were used as the QC samples for Cyanide.

Matrix SO	Batch ID: GP7295

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M61007-17DUP, M61007-17MS were used as the QC samples for Cyanide.

Matrix SO	Batch ID: GP7299

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M61007-43DUP, M61007-43MS were used as the QC samples for Cyanide.

Matrix SO	Batch ID: GP7301

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M61068-2DUP, M61068-2MS were used as the QC samples for Cyanide.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(M61007).

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WC-SED-18		
Lab Sample ID:	M61007-1	Date Sampled:	11/21/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	18.6
Project:	Creese + Cook Danvers MA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Chromium	445	3.1	mg/kg	1	12/04/06	12/06/06	PY	SW846 6010B [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA7630
(2) Prep QC Batch: MP9645

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-18		
Lab Sample ID:	M61007-1	Date Sampled:	11/21/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	18.6
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<11	11	mg/kg	1	11/30/06	MA	SW846 3060A/7196A
Cyanide	<1.3	1.3	mg/kg	1	11/30/06 18:27	MA	SW846 9012 M
Solids, Percent	18.6		%	1	11/27/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-20		
Lab Sample ID:	M61007-2	Date Sampled:	11/21/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	54.2
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	19.9	3.7	mg/kg	1	11/30/06	MA	SW846 3060A/7196A
Cyanide	<0.61	0.61	mg/kg	1	11/30/06 18:28	MA	SW846 9012 M
PAC Cyanide	<0.45	0.45	mg/kg	1	12/03/06 16:27	MA	MA DEP
Solids, Percent	54.2		%	1	11/27/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-19		
Lab Sample ID:	M61007-3	Date Sampled:	11/22/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	72.7
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 2.8	2.8	mg/kg	1	11/30/06	MA	SW846 3060A/7196A
Cyanide	< 0.59	0.59	mg/kg	1	12/03/06 13:20	MA	SW846 9012 M
Solids, Percent	72.7		%	1	11/27/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-17		
Lab Sample ID:	M61007-4	Date Sampled:	11/22/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	53.0
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<3.8	3.8	mg/kg	1	11/30/06	MA	SW846 3060A/7196A
Cyanide	<0.55	0.55	mg/kg	1	12/03/06 13:22	MA	SW846 9012 M
Solids, Percent	53		%	1	11/27/06	NJ	EPA 160.3 M
Total Organic Carbon	41600	1800	mg/kg	1	12/07/06 12:57	CF	CORP ENG 81 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-13		
Lab Sample ID:	M61007-5	Date Sampled:	11/22/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	55.9
Project:	Creese + Cook Danvers MA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Chromium	512	1.6	mg/kg	1	12/04/06	12/06/06	PY	SW846 6010B [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA7630
(2) Prep QC Batch: MP9645

RL = Reporting Limit

Report of Analysis

3.5

Client Sample ID:	WC-SED-13		
Lab Sample ID:	M61007-5	Date Sampled:	11/22/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	55.9
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 3.6	3.6	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	< 0.77	0.77	mg/kg	1	12/03/06 13:23	MA	SW846 9012 M
Solids, Percent	55.9		%	1	11/27/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-11		
Lab Sample ID:	M61007-6	Date Sampled:	11/22/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	48.6
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	4.6	4.1	mg/kg	1	11/30/06	MA	SW846 3060A/7196A
Cyanide	<0.63	0.63	mg/kg	1	12/03/06 13:24	MA	SW846 9012 M
Solids, Percent	48.6		%	1	11/27/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-9		
Lab Sample ID:	M61007-7	**Date Sampled:**	11/22/06
Matrix:	SO - Sediment	**Date Received:**	11/22/06
		Percent Solids:	46.2
Project:	Creese + Cook Danvers MA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	1710	2.1	mg/kg	1	12/04/06	12/06/06 PY	SW846 6010B [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA7630
(2) Prep QC Batch: MP9645

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-9		
Lab Sample ID:	M61007-7	**Date Sampled:**	11/22/06
Matrix:	SO - Sediment	**Date Received:**	11/22/06
		Percent Solids:	46.2
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	4.8	4.3	mg/kg	1	11/30/06	MA	SW846 3060A/7196A
Cyanide	<0.73	0.73	mg/kg	1	12/03/06 13:25	MA	SW846 9012 M
Solids, Percent	46.2		%	1	11/27/06	NJ	EPA 160.3 M
Total Organic Carbon	49700	2100	mg/kg	1	12/07/06 13:09	CF	CORP ENG 81 M

RL = Reporting Limit

Report of Analysis

3.8

Client Sample ID:	WC-SED-7		
Lab Sample ID:	M61007-8	Date Sampled:	11/22/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	52.7
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	3.9	3.8	mg/kg	1	11/30/06	MA	SW846 3060A/7196A
Cyanide	<0.62	0.62	mg/kg	1	12/03/06 13:26	MA	SW846 9012 M
Solids, Percent	52.7		%	1	11/27/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-3		
Lab Sample ID:	M61007-9	Date Sampled:	11/22/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	53.2
Project:	Creese + Cook Danvers MA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Chromium	91.9	1.7	mg/kg	1	12/04/06	12/06/06	PY	SW846 6010B [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA7630
(2) Prep QC Batch: MP9645

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-3		
Lab Sample ID:	M61007-9	**Date Sampled:**	11/22/06
Matrix:	SO - Sediment	**Date Received:**	11/22/06
		Percent Solids:	53.2
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<3.8	3.8	mg/kg	1	11/30/06	MA	SW846 3060A/7196A
Cyanide	<0.45	0.45	mg/kg	1	12/03/06 13:27	MA	SW846 9012 M
Solids, Percent	53.2		%	1	11/27/06	NJ	EPA 160.3 M
Total Organic Carbon	34900	1800	mg/kg	1	12/07/06 13:23	CF	CORPENG 81 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-12		
Lab Sample ID:	M61007-10	Date Sampled:	11/22/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	22.9
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<8.7	8.7	mg/kg	1	11/30/06	MA	SW846 3060A/7196A
Cyanide	<0.89	0.89	mg/kg	1	12/03/06 13:28	MA	SW846 9012 M
PAC Cyanide	<0.92	0.92	mg/kg	1	12/03/06 16:28	MA	MA DEP
Solids, Percent	22.9		%	1	11/27/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-10		
Lab Sample ID:	M61007-11	**Date Sampled:**	11/22/06
Matrix:	SO - Sediment	**Date Received:**	11/22/06
		Percent Solids:	31.5
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<6.3	6.3	mg/kg	1	11/30/06	MA	SW846 3060A/7196A
Cyanide	<0.79	0.79	mg/kg	1	12/03/06 13:29	MA	SW846 9012 M
Solids, Percent	31.5		%	1	11/27/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-41		
Lab Sample ID:	M61007-12	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	81.2
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	13.1	2.5	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	0.84	0.61	mg/kg	1	11/30/06 18:29	MA	SW846 9012 M
Solids, Percent	81.2		%	1	11/27/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-42		
Lab Sample ID:	M61007-13	**Date Sampled:**	11/21/06
Matrix:	SO - Soil	**Date Received:**	11/22/06
		Percent Solids:	93.8
Project:	Creese + Cook Danvers MA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	12.8	2.0	mg/kg	1	12/04/06	12/06/06 PY	SW846 6010B [1]	SW846 3050B [2]
Chromium	22.2	1.0	mg/kg	1	12/04/06	12/06/06 PY	SW846 6010B [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA7630
(2) Prep QC Batch: MP9645

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-42		
Lab Sample ID:	M61007-13	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	93.8
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.1	2.1	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.50	0.50	mg/kg	1	11/30/06 18:30	MA	SW846 9012 M
Solids, Percent	93.8		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-43		
Lab Sample ID:	M61007-14	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	84.7
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.4	2.4	mg/kg	1	12/08/06	MA	SW846 8060A/7196A
Cyanide	<0.55	0.55	mg/kg	1	11/30/06 18:31	MA	SW846 9012 M
PAC Cyanide	<0.55	0.55	mg/kg	1	12/03/06 16:29	MA	MA DEP
Solids, Percent	84.7		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-16		
Lab Sample ID:	M61007-15	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	80.9
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.5	2.5	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.56	0.56	mg/kg	1	11/30/06 18:32	MA	SW846 9012 M
PAC Cyanide	<0.60	0.60	mg/kg	1	12/03/06 16:32	MA	MA DEP
Solids, Percent	80.9		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-15		
Lab Sample ID:	M61007-16	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	91.3
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	14.7	2.2	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.53	0.53	mg/kg	1	11/30/06 18:33	MA	SW846 9012 M
Solids, Percent	91.3		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-14		
Lab Sample ID:	M61007-17	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	86.9
Project:	Creese + Cook Danvers MA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	414	2.1	mg/kg	1	12/04/06	12/06/06	PY	SW846 6010B [1]	SW846 3050B [2]
Chromium	264	1.0	mg/kg	1	12/04/06	12/06/06	PY	SW846 6010B [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA7630
(2) Prep QC Batch: MP9645

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-14		
Lab Sample ID:	M61007-17	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	86.9
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	27.7	2.3	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.56	0.56	mg/kg	1	12/03/06 12:48	MA	SW846 9012 M
Solids, Percent	86.9		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-13		
Lab Sample ID:	M61007-18	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	86.2
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	21.2	2.3	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.55	0.55	mg/kg	1	12/03/06 12:49	MA	SW846 9012 M
Solids, Percent	86.2		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-1		
Lab Sample ID:	M61007-19	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	77.2
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	14.9	2.6	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.63	0.63	mg/kg	1	12/03/06 12:50	MA	SW846 9012 M
Solids, Percent	77.2		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-2		
Lab Sample ID:	M61007-20	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	81.0
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.5	2.5	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.61	0.61	mg/kg	1	12/03/06 12:53	MA	SW846 9012 M
Solids, Percent	81		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-3		
Lab Sample ID:	M61007-21	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	80.0
Project:	Creese + Cook Danvers MA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	77.1	2.1	mg/kg	1	12/04/06	12/06/06	PY	SW846 6010B [1]	SW846 3050B [2]
Chromium	1070	1.1	mg/kg	1	12/04/06	12/06/06	PY	SW846 6010B [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA7630
(2) Prep QC Batch: MP9645

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-3		
Lab Sample ID:	M61007-21	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	80.0
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.5	2.5	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.53	0.53	mg/kg	1	12/03/06 12:54	MA	SW846 9012 M
Solids, Percent	80		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-4		
Lab Sample ID:	M61007-22	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	91.1
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	2.6	2.2	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.47	0.47	mg/kg	1	12/03/06 12:54	MA	SW846 9012 M
PAC Cyanide	<0.49	0.49	mg/kg	1	12/03/06 16:27	MA	MA DEP
Solids, Percent	91.1		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-5		
Lab Sample ID:	M61007-23	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	79.9
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	17.1	2.5	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.59	0.59	mg/kg	1	12/03/06 12:55	MA	SW846 9012 M
Solids, Percent	79.9		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-6		
Lab Sample ID:	M61007-24	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	86.1
Project:	Creese + Cook Danvers MA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	59.5	2.1	mg/kg	1	12/04/06	12/06/06	PY	SW846 6010B [1]	SW846 3050B [2]
Chromium	128	1.0	mg/kg	1	12/04/06	12/06/06	PY	SW846 6010B [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA7630
(2) Prep QC Batch: MP9645

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-6		
Lab Sample ID:	M61007-24	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	86.1
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	3.8	2.3	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.53	0.53	mg/kg	1	12/03/06 12:56	MA	SW846 9012 M
Solids, Percent	86.1		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-7		
Lab Sample ID:	M61007-25	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	87.1
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	43.3	2.3	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.49	0.49	mg/kg	1	12/03/06 12:57	MA	SW846 9012 M
Solids, Percent	87.1		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-8		
Lab Sample ID:	M61007-26	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	82.4
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	77.8	2.4	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.60	0.60	mg/kg	1	12/03/06 12:58	MA	SW846 9012 M
PAC Cyanide	<0.58	0.58	mg/kg	1	12/03/06 16:33	MA	MA DEP
Solids, Percent	82.4		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-9		
Lab Sample ID:	M61007-27	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	81.3
Project:	Creese + Cook Danvers MA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	83.5	2.2	mg/kg	1	12/04/06	12/06/06	PY	SW846 6010B [1]	SW846 3050B [2]
Chromium	370	1.1	mg/kg	1	12/04/06	12/06/06	PY	SW846 6010B [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA7630
(2) Prep QC Batch: MP9645

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-9		
Lab Sample ID:	M61007-27	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	81.3
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	17.4	2.5	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.55	0.55	mg/kg	1	12/03/06 12:59	MA	SW846 9012 M
Solids, Percent	81.3		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

3.28 B

Client Sample ID:	WC-10		
Lab Sample ID:	M61007-28	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	68.5
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	333	15	mg/kg	5	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.69	0.69	mg/kg	1	12/03/06 13:00	MA	SW846 9012 M
Solids, Percent	68.5		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-11		
Lab Sample ID:	M61007-29	Date Sampled:	11/21/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	78.8
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.5	2.5	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.61	0.61	mg/kg	1	12/03/06 13:01	MA	SW846 9012 M
Solids, Percent	78.8		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-12		
Lab Sample ID:	M61007-30	**Date Sampled:**	11/21/06
Matrix:	SO - Soil	**Date Received:**	11/22/06
		Percent Solids:	78.9
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	48.6	2.5	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.55	0.55	mg/kg	1	12/03/06 13:03	MA	SW846 9012 M
PAC Cyanide	<0.58	0.58	mg/kg	1	12/03/06 16:35	MA	MA DEP
Solids, Percent	78.9		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-14		
Lab Sample ID:	M61007-31	Date Sampled:	11/21/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	29.9
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<6.7	6.7	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.85	0.85	mg/kg	1	12/03/06 13:04	MA	SW846 9012 M
Solids, Percent	29.9		%	1	11/28/06	NJ	EPA 160.3 M
Total Organic Carbon	93700	3200	mg/kg	1	12/07/06 13:35	CF	CORP ENG 81 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-15		
Lab Sample ID:	M61007-32	Date Sampled:	11/21/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	60.4
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<3.3	3.3	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.50	0.50	mg/kg	1	12/03/06 13:05	MA	SW846 9012 M
Solids, Percent	60.4		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-16		
Lab Sample ID:	M61007-33	Date Sampled:	11/21/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	48.7
Project:	Creese + Cook Danvers MA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Chromium	1320	1.5	mg/kg	1	12/04/06	12/06/06	PY	SW846 6010B [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA7630
(2) Prep QC Batch: MP9645

RL = Reporting Limit

Report of Analysis

3.33 B

Client Sample ID:	WC-SED-16		
Lab Sample ID:	M61007-33	Date Sampled:	11/21/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	48.7
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	114	21	mg/kg	5	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.54	0.54	mg/kg	1	12/03/06 13:06	MA	SW846 9012 M
PAC Cyanide	<0.55	0.55	mg/kg	1	12/03/06 16:36	MA	MA DEP
Solids, Percent	48.7		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-8		
Lab Sample ID:	M61007-34	Date Sampled:	11/22/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	50.7
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<3.9	3.9	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.68	0.68	mg/kg	1	12/03/06 13:30	MA	SW846 9012 M
PAC Cyanide	<0.71	0.71	mg/kg	1	12/03/06 16:36	MA	MA DEP
Solids, Percent	50.7		%	1	11/28/06	NJ	EPA 160.3 M
Total Organic Carbon	30900	1900	mg/kg	1	12/07/06 14:01	CF	CORP ENG 81 M

RL = Reporting Limit

Report of Analysis

3.35

Client Sample ID:	WC-SED-6		
Lab Sample ID:	M61007-35	**Date Sampled:**	11/22/06
Matrix:	SO - Sediment	**Date Received:**	11/22/06
		Percent Solids:	42.6
Project:	Creese + Cook Danvers MA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Chromium	916	1.5	mg/kg	1	12/04/06	12/06/06	PY	SW846 6010B [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA7630
(2) Prep QC Batch: MP9645

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-6		
Lab Sample ID:	M61007-35	Date Sampled:	11/22/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	42.6
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<4.7	4.7	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.54	0.54	mg/kg	1	12/03/06 13:30	MA	SW846 9012 M
Solids, Percent	42.6		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-5		
Lab Sample ID:	M61007-36	Date Sampled:	11/22/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	24.3
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<8.2	8.2	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.94	0.94	mg/kg	1	12/03/06 13:33	MA	SW846 9012 M
Solids, Percent	24.3		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-4		
Lab Sample ID:	M61007-37	Date Sampled:	11/22/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	19.4
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<10	10	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<1.1	1.1	mg/kg	1	12/03/06 13:34	MA	SW846 9012 M
PAC Cyanide	<1.1	1.1	mg/kg	1	12/03/06 16:37	MA	MA DEP
Solids, Percent	19.4		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-2		
Lab Sample ID:	M61007-38	**Date Sampled:**	11/22/06
Matrix:	SO - Sediment	**Date Received:**	11/22/06
		Percent Solids:	27.4
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<7.3	7.3	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.68	0.68	mg/kg	1	12/03/06 13:35	MA	SW846 9012 M
Solids, Percent	27.4		%	1	11/28/06	NJ	EPA 160.3 M
Total Organic Carbon	113000	3500	mg/kg	1	12/07/06 14:14	CF	CORP ENG 81 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-SED-1		
Lab Sample ID:	M61007-39	Date Sampled:	11/22/06
Matrix:	SO - Sediment	Date Received:	11/22/06
		Percent Solids:	26.0
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<7.7	7.7	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<1.0	1.0	mg/kg	1	12/03/06 13:36	MA	SW846 9012 M
Solids, Percent	26		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

3.40
2

Report of Analysis

Client Sample ID:	WC-101		
Lab Sample ID:	M61007-40	**Date Sampled:**	11/22/06
Matrix:	SO - Soil	**Date Received:**	11/22/06
		Percent Solids:	78.4
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.6	2.6	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.63	0.63	mg/kg	1	12/03/06 13:37	MA	SW846 9012 M
Solids, Percent	78.4		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-17		
Lab Sample ID:	M61007-41	Date Sampled:	11/22/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	85.9
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	5.5	2.3	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.54	0.54	mg/kg	1	12/03/06 13:38	MA	SW846 9012 M
Solids, Percent	85.9		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-19		
Lab Sample ID:	M61007-42	Date Sampled:	11/22/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	90.9
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	5.8	2.2	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.52	0.52	mg/kg	1	12/03/06 13:39	MA	SW846 9012 M
Solids, Percent	90.9		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-21		
Lab Sample ID:	M61007-43	Date Sampled:	11/22/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	71.8
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.8	2.8	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.63	0.63	mg/kg	1	12/03/06 13:18	MA	SW846 9012 M
Solids, Percent	71.8		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-25		
Lab Sample ID:	M61007-44	**Date Sampled:**	11/22/06
Matrix:	SO - Soil	**Date Received:**	11/22/06
		Percent Solids:	83.7
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	9.4	2.4	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.54	0.54	mg/kg	1	12/03/06 14:04	MA	SW846 9012 M
Solids, Percent	83.7		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-23		
Lab Sample ID:	M61007-45	Date Sampled:	11/22/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	77.7
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.6	2.6	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.59	0.59	mg/kg	1	12/03/06 14:05	MA	SW846 9012 M
Solids, Percent	77.7		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-27		
Lab Sample ID:	M61007-46	**Date Sampled:**	11/22/06
Matrix:	SO - Soil	**Date Received:**	11/22/06
		Percent Solids:	79.1
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.5	2.5	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.57	0.57	mg/kg	1	12/03/06 14:06	MA	SW846 9012 M
Solids, Percent	79.1		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-28		
Lab Sample ID:	M61007-47	Date Sampled:	11/22/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	80.9
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	5.0	2.5	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.60	0.60	mg/kg	1	12/03/06 14:07	MA	SW846 9012 M
PAC Cyanide	<0.59	0.59	mg/kg	1	12/03/06 16:38	MA	MA DEP
Solids, Percent	80.9		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

3.48
3

Client Sample ID:	WC-18		
Lab Sample ID:	M61007-48	Date Sampled:	11/22/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	85.5
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	8.4	2.3	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.54	0.54	mg/kg	1	12/03/06 14:08	MA	SW846 9012 M
Solids, Percent	85.5		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-26		
Lab Sample ID:	M61007-49	Date Sampled:	11/22/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	73.4
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.7	2.7	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.62	0.62	mg/kg	1	12/03/06 14:09	MA	SW846 9012 M
Solids, Percent	73.4		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-22		
Lab Sample ID:	M61007-50	**Date Sampled:**	11/22/06
Matrix:	SO - Soil	**Date Received:**	11/22/06
		Percent Solids:	87.3
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	3.5	2.3	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.55	0.55	mg/kg	1	12/03/06 14:10	MA	SW846 9012 M
Solids, Percent	87.3		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-24		
Lab Sample ID:	M61007-51	Date Sampled:	11/22/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	90.6
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.2	2.2	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.50	0.50	mg/kg	1	12/03/06 14:11	MA	SW846 9012 M
PAC Cyanide	<0.51	0.51	mg/kg	1	12/03/06 16:39	MA	MA DEP
Solids, Percent	90.6		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-20		
Lab Sample ID:	M61007-52	**Date Sampled:**	11/22/06
Matrix:	SO - Soil	**Date Received:**	11/22/06
		Percent Solids:	84.0
Project:	Creese + Cook Danvers MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.4	2.4	mg/kg	1	12/08/06	MA	SW846 3060A/7196A
Cyanide	<0.58	0.58	mg/kg	1	12/03/06 14:13	MA	SW846 9012 M
PAC Cyanide	<0.58	0.58	mg/kg	1	12/03/06 16:40	MA	MA DEP
Solids, Percent	84		%	1	11/28/06	NJ	EPA 160.3 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WC-44		
Lab Sample ID:	M61007-53	Date Sampled:	11/22/06
Matrix:	SO - Soil	Date Received:	11/22/06
		Percent Solids:	75.9
Project:	Creese + Cook Danvers MA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	83.0	2.5	mg/kg	1	12/04/06	12/06/06	PY	SW846 6010B [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA7630
(2) Prep QC Batch: MP9645

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- MCP Form

CHAIN OF CUSTODY

ACCUTEST Laboratories

495 TECHNOLOGY CENTER WEST • BUILDING ONE
MARLBOROUGH, MA 01752
TEL: 508-481-6200 • FAX: 508-481-7753

1 of 5

ACCUTEST JOB #: M61007
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: Woodard & Curran
ADDRESS: 35 New England Bus. Ctr., Ste. 130
CITY: Andover STATE: MA ZIP: 01810
SEND REPORT TO: Dave MacDonald
PHONE #: 978-557-8150

FACILITY INFORMATION

PROJECT NAME: Crosse + Cook
LOCATION: Danvers, MA
PROJECT NO.: 210667
FAX #: 978-557-7946

ANALYTICAL INFORMATION

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE # M61007	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	HNO3	H2SO4	NONE	Dioxin (8270)	Cyanide (9010B)	Hexavalent Chromium (7196A)	Arsenic (6010B)	Total Chromium	Total Organic Carbon	LAB USE ONLY
-1	WC-SED-18	11/21/06	15:20	JP	SO	1				X		✓	✓		✓		
-2	WC-SED-20	11/21/06	15:00	JP	SO	2					✓	✓	✓	✓	✓		
-3	WC-SED-19	11/22/06	6:50	AW		2					✓	✓	✓				
-4	WC-SED-17	11/22/06	7:15	AW		1						✓	✓		✓	✓	
-5	WC-SED-13	11/22/06	7:20	AW		2					✓	✓	✓		✓		
-6	WC-SED-11	11/22/06	7:30	AW		1						✓	✓				
-7	WC-SED-9	11/22/06	7:40	AW		2					✓	✓	✓		✓	✓	
-8	WC-SED-7	11/22/06	7:50	AW		1						✓	✓				
-9	WC-SED-3	11/22/06	8:00	AW		2					✓	✓	✓		✓	✓	
-10	WC-SED-12	11/22/06	8:50	JP							✓	✓	✓				
-11	WC-SED-10	11/22/06	8:55	JP	↓					↓		✓	✓				

DATA TURNAROUND INFORMATION

- ☑ 14 DAYS STANDARD — APPROVED BY:
- ☐ 7 DAYS *RUSH*
- ☐ 48 HOUR EMERGENCY
- ☐ OTHER

14 DAY TURNAROUND HARDCOPY, EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- ☐ STANDARD
- ☐ COMMERCIAL "B"
- ☐ DISK DELIVERABLE
- ☐ STATE FORMS
- ☐ OTHER (SPECIFY)

COMMENTS/REMARKS

for LLC

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	11/22 13:50	1.	2.	11/22/06 16:00	2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.		3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☑	TEMPERATURE 19.2°C
5.		5.				

4.1 4

M61007: Chain of Custody
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CHAIN OF CUSTODY

ACCUTEST Laboratories

495 TECHNOLOGY CENTER WEST • BUILDING ONE
MARLBOROUGH, MA 01752
TEL: 508-481-6200 • FAX: 508-481-7753

2 of 5

ACCUTEST JOB #: M61007
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: Woodard + Curran
ADDRESS: 35 New England Bus. Ctr., Suite 150
CITY: Andover STATE: MA ZIP: 01810
SEND REPORT TO: Dave MacDonald
PHONE #: 978-557-8150

FACILITY INFORMATION

PROJECT NAME: Creese + Cook
LOCATION: Danvers, MA
PROJECT NO.: 310667
FAX #: 978-557-7946

ANALYTICAL INFORMATION

Dioxin (8290)
Cyanide (9010B)
Hexavalent Chromium 7196
Arsenic (6010)
Total Chromium

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE # M61007	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	HNO3	H2SO4	NaOH	NONE	Dioxin (8290)	Cyanide (9010B)	Hexavalent Chromium 7196	Arsenic (6010)	Total Chromium	LAB USE ONLY
-12	WC-41	11/21/06	9:10	JP	SO	2						✓	✓	✓			
-13	WC-42		9:25			2						✓	✓	✓	✓	✓	
-14	WC-43		9:30			2						✓	✓	✓			
-15	WC-16		10:10			1							✓	✓			
-16	WC-15		10:20			2						✓	✓	✓			
-17	WC-14		10:35			1							✓	✓	✓	✓	
-18	WC-13		10:40			2						✓	✓	✓			
-19	WC-1		11:00			2						✓	✓	✓			
-20	WC-2		11:05			1							✓	✓			
-21	WC-3		11:10			2						✓	✓	✓	✓	✓	
-22	WC-4	↓	11:15	↓	↓	1							✓	✓			

DATA TURNAROUND INFORMATION

☑ 14 DAYS STANDARD — APPROVED BY:
☐ 7 DAYS *RUSH*
☐ 48 HOUR EMERGENCY
☐ OTHER

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

☐ STANDARD
☐ COMMERCIAL "B"
☐ DISK DELIVERABLE
☐ STATE FORMS
☐ OTHER (SPECIFY)

COMMENTS/REMARKS

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	11/22 1350	1.	2.	11/22/06 1600	2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.		3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☑ TEMPERATURE 1.9/2.1 °C
5.		5.			

M61007: Chain of Custody
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CHAIN OF CUSTODY

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3 of 5

ACCUTEST JOB #: M61007
ACCUTEST QUOTE #:

CLIENT INFORMATION
NAME: Woodard + Curran
ADDRESS: 35 New England Bus Ctr, Ste 150
CITY: Andover STATE: MA ZIP: 01810
SEND REPORT TO: Dave MacDonald
PHONE #: 978-557-8150

FACILITY INFORMATION
PROJECT NAME: Creese + Cook
LOCATION: Danvers, MA
PROJECT NO.: 210667
FAX #: 978-557-7946

MATRIX CODES
DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE # M61007	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION	Dioxin	Cyanide	Hex. Chromium	Arsenic	Total Chromium	Total Organic Carbon	LAB USE ONLY
-23	WC-5	11/21/06	11:20	JP	SO	2		✓	✓	✓				
-24	WC-6		11:25			1			✓	✓	✓	✓		
-25	WC-7		11:30			2		✓	✓	✓				
-26	WC-8		11:35			1			✓	✓				
-27	WC-9		11:40			2		✓	✓	✓	✓	✓		
-28	WC-10		11:45			1			✓	✓				
-29	WC-11		11:50			2		✓	✓	✓				
-30	WC-12		11:55			1			✓	✓			✓	
-31	WC-SED-14		14:55			1			✓	✓				
-32	WC-SED-15		15:10			1			✓	✓				
-33	WC-SED-16	↓	15:15	↓	↓	2		✓	✓	✓		✓		

DATA TURNAROUND INFORMATION
- ☑ 14 DAYS STANDARD — APPROVED BY:
- ☐ 7 DAYS *RUSH*
- ☐ 48 HOUR EMERGENCY
- ☐ OTHER

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION
- ☐ STANDARD
- ☐ COMMERCIAL "B"
- ☐ DISK DELIVERABLE
- ☐ STATE FORMS
- ☐ OTHER (SPECIFY)

COMMENTS/REMARKS

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	11/22 13:50	1.	2.	Nov 16, '06	2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.		3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐	TEMPERATURE 1.9 °C
5.		5.				

M61007: Chain of Custody
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ACCUTEST Laboratories

CHAIN OF CUSTODY

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4/5

ACCUTEST JOB #: M61007
ACCUTEST QUOTE #:

CLIENT INFORMATION

W&C
NAME
35 New England Bus Ctr, Ste. 180
ADDRESS
Andover MA 01810
CITY STATE ZIP
Dave MacDonald
SEND REPORT TO:
PHONE #

FACILITY INFORMATION

Creese & Cook
PROJECT NAME
Danvers, MA
LOCATION
210667
PROJECT NO.
FAX # 978-557-7946

ANALYTICAL INFORMATION

Dioxin 8290
Cyanide 9010/5
Hexavalent Chrom. 7196A
Arsenic 6010B
Total Chromium
Total Organic Carbon

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE # M61007	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION: NO	HCl	HNO3	H2SO4	NONE	Dioxin 8290	Cyanide 9010/5	Hexavalent Chrom. 7196A	Arsenic 6010B	Total Chromium	Total Organic Carbon	LAB USE ONLY
-34	WC-SED-8	11/22/06	9:00	JP	SO	1							✓	✓			✓	
-35	WC-SED-6	11/22/06	9:10			2						✓	✓	✓		✓		
-36	WC-SED-5		9:25			1							✓	✓				
-37	WC-SED-4		9:35			2						✓	✓	✓				
-38	WC-SED-2		9:40			1							✓	✓			✓	
-39	WC-SED-1		9:45			2						✓	✓	✓				
-40	WC-101		12:10			2						✓	✓	✓				
-41	WC-17		11:00			2						✓	✓	✓				
-42	WC-19		11:10			2						✓	✓	✓				
-43	WC-21		11:20			2						✓	✓	✓				
-44	WC-25	↓	11:40	↓	↓	2						✓	✓	✓				

DATA TURNAROUND INFORMATION

☑ 14 DAYS STANDARD APPROVED BY:
☐ 7 DAYS *RUSH*
☐ 48 HOUR EMERGENCY
☐ OTHER

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

☐ STANDARD
☐ COMMERCIAL "B"
☐ DISK DELIVERABLE
☐ STATE FORMS
☐ OTHER (SPECIFY)

COMMENTS/REMARKS

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	11/22 1350	1.	2.	11/22/06 16:00	2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.		3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☑ TEMPERATURE 4.0°C
5.		5.			

M61007: Chain of Custody
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CHAIN OF CUSTODY

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5 of 5

ACCUTEST JOB #: M61007
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: Woodard & Curran
ADDRESS: 35 New England Bus. Ctr., Ste. 130
CITY: Andover STATE: MA ZIP: 01810
SEND REPORT TO: Dave MacDonald
PHONE #:

FACILITY INFORMATION

PROJECT NAME: Greese & Cook
LOCATION: Danvers, MA
PROJECT NO.: 210667
FAX #: 978-557-7946

ANALYTICAL INFORMATION

Dioxin 8290 | Cyanide 9010B | Hexavalent Chrom. 1196A | Arsenic 6010B | Total Chromium

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE # M61007	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	Dioxin 8290	Cyanide 9010B	Hexavalent Chrom. 1196A	Arsenic 6010B	Total Chromium	LAB USE ONLY
-45	WC-23	11/22/06	11:30	JP	SO	2					X	✓	✓	✓			
-46	WC-27	"	11:50			2						✓	✓	✓			
-47	WC-28		11:55			1							✓	✓			
-48	WC-18		11:05			1							✓	✓			
-49	WC-26		11:45			1							✓	✓			
-50	WC-22		11:25			1							✓	✓			
-51	WC-24		11:35			1							✓	✓			
-52	WC-20		11:15			1							✓	✓			
-53	WC-44		12:05									✓			✓		

DATA TURNAROUND INFORMATION

☑ 14 DAYS STANDARD — APPROVED BY:
☐ 7 DAYS *RUSH*
☐ 48 HOUR EMERGENCY
☐ OTHER

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

☐ STANDARD
☐ COMMERCIAL "B"
☐ DISK DELIVERABLE
☐ STATE FORMS
☑ OTHER (SPECIFY) MCP

COMMENTS/REMARKS

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	11/22 13:50	1.	2.	11/23/06 16:20	2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.		3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐ TEMPERATURE
5.		5.			1.9 2.1.0 C

4.1 4

M61007: Chain of Custody
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DEC-01-2006 FRI 10:44 AM Woodard & Curran FAX NO. 19785577948 P. 01

M61007

WOODARD & CURRAN
Engineering · Science · Operations

35 New England Business Ctr., Andover, MA 01810
(978) 557-8150 • 1-866-702-6371
Fax: (978) 557-7848

CORPORATE OFFICES: Maine, Massachusetts, New Hampshire, Connecticut, and Florida
Operational offices throughout the U.S.

FAX TRANSMITTAL SHEET

To: Accutest - Frank
sample management

Fax #: 508.481.7753

Sender: Amy Wallace

Date: 12-1-06

No. of pages (including cover sheet) 6

Hard copy to follow in mail: Yes ___ No X

Project #: Creese+Cook - Danvers

Comments

revised COC's to include PAC analysis of 13 samples. Thanks!

-Amy

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Page 6 of 11

ACCUTEST
M61007

ACCUTEST Laboratories

CHAIN OF CUSTODY

495 TECHNOLOGY CENTER WEST • BUILDING ONE
MARLBOROUGH, MA 01752
TEL: 508-481-6200 • FAX: 508-481-7753

ACCUTEST JOB #: M61007
ACCUTEST QUOTE #:

CLIENT INFORMATION
NAME: Woodard & Curran
ADDRESS: 35 New England Bus. Ctr., Ste. 140
CITY: Andover STATE: MA ZIP: 01810
SEND REPORT TO: Dave MacDonald
PHONE #: 978-557-8150

FACILITY INFORMATION
PROJECT NAME: Creese & Cook
LOCATION: Danvers, MA
PROJECT NO.: 210667
FAX #: 978-557-7946

ANALYTICAL INFORMATION

MATRIX CODES
DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OL - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION	Dioxin (8290)	Furnish (8290 B)	Hexavalent Chromium 7196A	Inorganic (6010B)	Total Chromium	Total Organic Carbon	Phys. Available Cyanide	LAB USE ONLY
-1	WC-SED-18	11/21/06	15:20	JP	SO	1	X		✓	✓		✓			
-2	WC-SED-20	11/21/06	15:00	JP	SO	2		✓	✓	✓				✓	
-3	WC-SED-19	11/22/06	6:50	AW		2		✓	✓	✓					
-4	WC-SED-17	11/22/06	7:00	AW		1			✓	✓					
-5	WC-SED-13	11/22/06	7:20	AW		2		✓	✓	✓		✓			
-6	WC-SED-11	11/22/06	7:30	AW		1			✓	✓					
-7	WC-SED-9	11/22/06	7:40	AW		2		✓	✓	✓		✓			
-8	WC-SED-7	11/22/06	7:50	AW		1			✓	✓					
-9	WC-SED-3	11/22/06	8:00	AW		2		✓	✓	✓		✓			
-10	WC-SED-12	11/22/06	8:50	JP				✓	✓	✓				✓	
-11	WC-SED-10	11/22/06	8:55	JP	↓	↓	↓		✓	✓					

DATA TURNAROUND INFORMATION
- ☐ 14 DAYS STANDARD — APPROVED BY:
- ☐ 7 DAYS *RUSH*
- ☐ 48 HOUR EMERGENCY
- ☐ OTHER

10 DAY TURNAROUND HARDCOPY, EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION
- ☐ STANDARD
- ☐ COMMERCIAL "B"
- ☐ DISK DELIVERABLE
- ☐ STATE FORMS
- ☐ OTHER (SPECIFY)

COMMENTS/REMARKS

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	11/22 13:50	1.	2.		2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.		3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐	TEMP BLK/TURB ____ C
5.		5.				

M61007: Chain of Custody
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CHAIN OF CUSTODY

ACCUTEST Laboratories
495 TECHNOLOGY CENTER WEST • BUILDING ONE
MARLBOROUGH, MA 01752
TEL: 508-481-6200 • FAX: 508-481-7753

ACCUTEST JOB #: M61007
ACCUTEST QUOTE #:

CLIENT INFORMATION
NAME: Woodard + Curran
ADDRESS: 35 New England Business Center, Suite 180
CITY: Andover STATE: MA ZIP: 01810
SEND REPORT TO: Dave MacDonald
PHONE #: 978-557-8150

FACILITY INFORMATION
PROJECT NAME: Creese & Cook
LOCATION: Danvers, MA
PROJECT NO.: 210667
FAX #: 978-557-7946

ANALYTICAL INFORMATION
Dioxin (9290) | Cyanide (9010B) | Hexavalent Chromium 7196 | Arsenic (6010B) | Total Chromium (6010B) | Phys. Available Cyanide

MATRIX CODES
DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION: HCl	HNO3	H2SO4	NONE	Dioxin (9290)	Cyanide (9010B)	Hexavalent Chromium 7196	Arsenic (6010B)	Total Chromium (6010B)	Phys. Available Cyanide	LAB USE ONLY
-12	WC-41	11/21/06	9:10	JP	SO	2					✓	✓	✓				
-13	WC-43		9:35			2					✓	✓	✓	✓	✓		
-14	WC-43		9:30			2					✓	✓	✓			✓	
-15	WC-11		10:10			1						✓	✓			✓	
-16	WC-15		10:30			2					✓	✓	✓				
-17	WC-14		10:35			1						✓	✓	✓	✓		
-18	WC-13		10:40			2					✓	✓	✓				
-19	WC-1		11:00			2					✓	✓	✓				
-20	~~WC-2~~ (WC-2)		11:05			1						✓	✓				
-21	WC-3		11:10			2					✓	✓	✓	✓	✓		
-22	WC-4	↓	11:15	↓		1						✓	✓			✓	

DATA TURNAROUND INFORMATION
- ☐ 14 DAYS STANDARD — APPROVED BY:
- ☐ 7 DAYS *RUSH*
- ☐ 48 HOUR EMERGENCY
- ☐ OTHER

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION
- ☐ STANDARD
- ☐ COMMERCIAL "B"
- ☐ DISK DELIVERABLE
- ☐ STATE FORMS ✓
- ☐ OTHER (SPECIFY)

COMMENTS/REMARKS

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	11/22 1350	1.	2.		2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.		3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐	TEMPERATURE ____ C
5.		5. 2				

M61007: Chain of Custody
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CHAIN OF CUSTODY

ACCUTEST Laboratories
495 TECHNOLOGY CENTER WEST • BUILDING ONE
MARLBOROUGH, MA 01752
TEL: 508-481-6200 • FAX: 508-481-7753

ACCUTEST JOB #: M61007
ACCUTEST QUOTE #:

CLIENT INFORMATION
NAME: Woodard + Curran
ADDRESS: 35 New England Bus. Ctr, Ste 140
CITY: Andover STATE: MA ZIP: 01810
SEND REPORT TO: Dave MacDonald
PHONE #: 978-557-8150

FACILITY INFORMATION
PROJECT NAME: Crosse + Cook
LOCATION: Danvers, MA
PROJECT NO.: 3106067
FAX #: 978-557-7946

ANALYTICAL INFORMATION

MATRIX CODES
DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION	Dioxins	Cyanide	Mercury (Aqueous)	Arsenic	Total Chromium	Total Cleaned Cyanide	Phys. Available Cyanide	LAB USE ONLY
-23	WC-5	11/21/06	11:20	JP	SO	2		✓	✓	✓					
-24	WC-6		11:35			1			✓	✓	✓	✓			
-25	WC-7		11:30			2		✓	✓	✓					
-26	WC-8		11:35			1			✓	✓				✓	
-27	WC-9		11:40			2		✓	✓	✓	✓	✓			
-28	WC-10		11:45			1			✓	✓	✓				
-29	WC-11		11:50			2		✓	✓	✓					
-30	WC-12		11:55			1			✓	✓				✓	
-31	WC-SED-14		14:55			1			✓	✓			✓		
-32	WC-SED-15		15:10			1			✓	✓					
-33	WC-SED-16	↓	15:15	↓	↓	2		✓	✓	✓	✓	✓		✓	

DATA TURNAROUND INFORMATION
☐ 14 DAYS STANDARD — APPROVED BY:
☐ 7 DAYS RUSH
☐ 48 HOUR EMERGENCY
☐ OTHER
14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION
☐ STANDARD
☐ COMMERCIAL "B"
☐ DISK DELIVERABLE
☐ STATE FORMS
☐ OTHER (SPECIFY)

COMMENTS/REMARKS

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	11/22 1350	1.	2.		2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.		3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐	TEMPERATURE ____ C
5.		5.				

M61007: Chain of Custody
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CHAIN OF CUSTODY

ACCUTEST Laboratories
495 TECHNOLOGY CENTER WEST • BUILDING ONE
MARLBOROUGH, MA 01752
TEL: 508-481-6200 • FAX: 508-481-7753

ACCUTEST JOB #: M61007
ACCUTEST QUOTE #:

CLIENT INFORMATION
NAME: WSC
ADDRESS: 36 New England Business Ctr, Ste 180
CITY: Andover STATE: MA ZIP: 01810
SEND REPORT TO: Dave MacDonald
PHONE #:

FACILITY INFORMATION
PROJECT NAME: Groves & Cook
LOCATION: Danvers, MA
PROJECT NO.: 210667
FAX #: 978-557-7946

ANALYTICAL INFORMATION

MATRIX CODES
DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	HNO3	H2SO4	NONE	Dioxin 8290	Cyanide 9010B	Hexavalent Chrom. 7196A	Arsenic 6010B	Total Chromium 6010B	Total Cyanide Cyanide Phys. Available Cyanide	LAB USE ONLY
-34	WC-SED-8	11/30/06	9:00	JP	SO	1						✓	✓		✓	✓	
-35	WC-SED-6	11/30/06	9:10			2					✓	✓	✓	✓			
-36	WC-SED-5		9:25			1						✓	✓				
-37	WC-SED-4		9:35			2					✓	✓	✓			✓	
-38	WC-SED-2		9:40			1						✓	✓		✓		
-39	WC-SED-1		9:45			2					✓	✓	✓				
-40	WC-101		12:10			2					✓	✓	✓				
-41	WC-17		11:00			2					✓	✓	✓				
-42	WC-19		11:10			2					✓	✓	✓				
-43	WC-21		11:20			2					✓	✓	✓				
-44	WC-25	↓	11:44	↓	↓	2					✓	✓	✓				

DATA TURNAROUND INFORMATION
☐ 14 DAYS STANDARD
☐ 7 DAYS *RUSH*
☐ 48 HOUR EMERGENCY
☐ OTHER
APPROVED BY:
14 DAY TURNAROUND HARDCOPY, EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION
☐ STANDARD
☐ COMMERCIAL "B"
☐ DISK DELIVERABLE
☐ STATE FORMS
☐ OTHER (SPECIFY)

COMMENTS/REMARKS

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	11/30 1350	1.	2.		2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.		3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐	TEMPERATURE 0
5.		5.				

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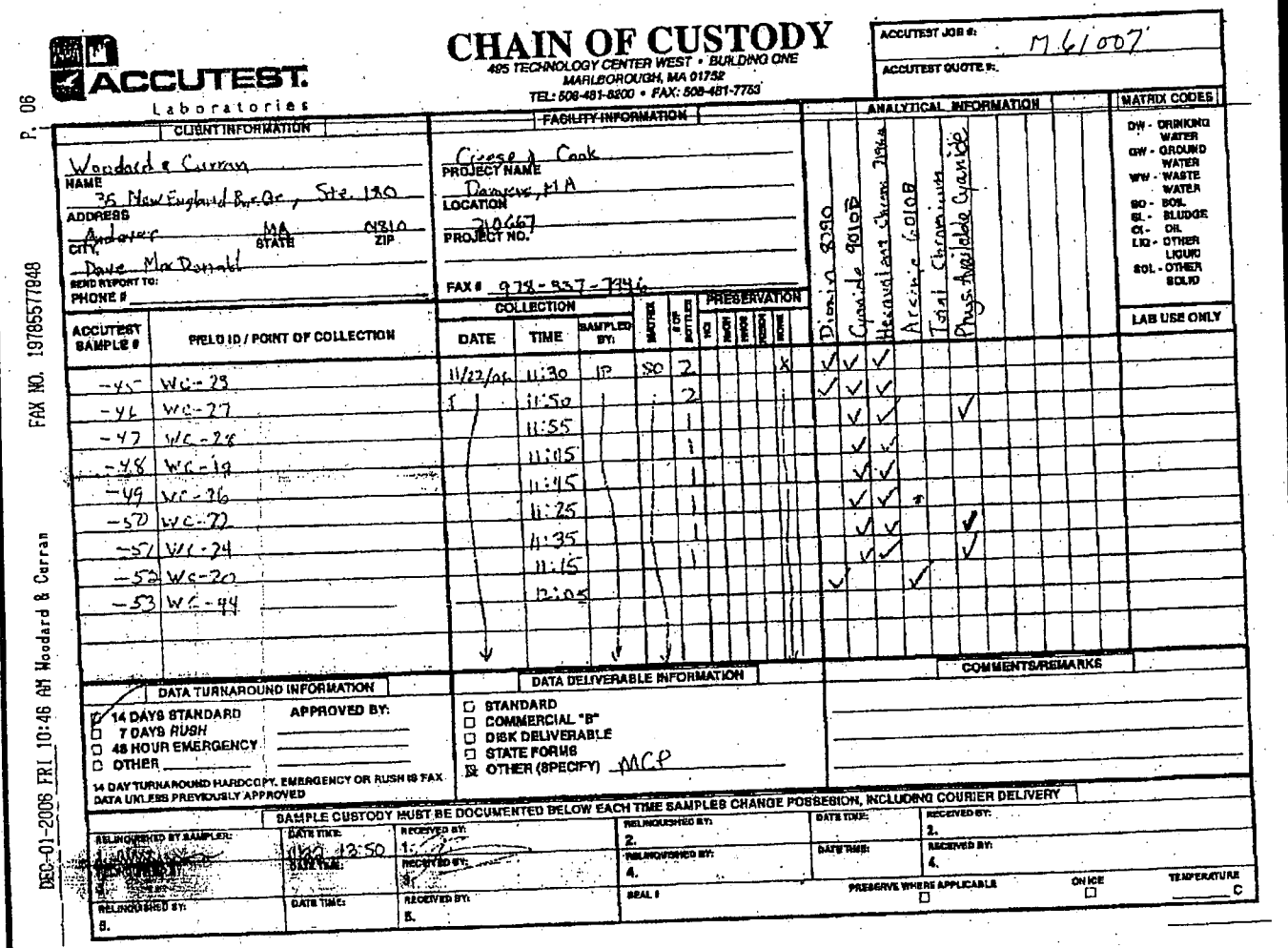

ACCUTEST Laboratories

CHAIN OF CUSTODY

495 TECHNOLOGY CENTER WEST • BUILDING ONE
MARLBOROUGH, MA 01752
TEL: 508-481-6200 • FAX: 508-481-7753

ACCUTEST JOB #: M61007
ACCUTEST QUOTE #:

CLIENT INFORMATION
NAME: Woodard & Curran
ADDRESS: 36 New England Bus. Ctr., Ste. 130
CITY: Andover STATE: MA ZIP: 01810
SEND REPORT TO: Dave MacDonald
PHONE #:

FACILITY INFORMATION
PROJECT NAME: Crosby Cook
LOCATION: Danvers, MA
PROJECT NO.: 310667
FAX #: 978-937-7946

ANALYTICAL INFORMATION: Dioxins 8290; Cyanide 9010B; Hexavalent Chrom. 3134; Arsenic 6010B; Total Chromium; Phys. Available Cyanide

MATRIX CODES: DW - DRINKING WATER; GW - GROUND WATER; WW - WASTE WATER; SO - SOIL; SL - SLUDGE; OI - OIL; LIQ - OTHER LIQUID; SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION: HCl	HNO3	H2SO4	NaOH	None	LAB USE ONLY
-45	WC-23	11/22/06	11:30	IP	SO	2					X	
-46	WC-27	"	11:50			2						
-47	WC-26		11:55			1						
-48	WC-19		11:05			1						
-49	WC-16		11:45			1						
-50	WC-22		11:25			1						
-51	WC-24		11:35			1						
-52	WC-20		11:15			1						
-53	WC-44		12:05									

DATA TURNAROUND INFORMATION
☑ 14 DAYS STANDARD
☐ 7 DAYS RUSH
☐ 48 HOUR EMERGENCY
☐ OTHER
APPROVED BY:
14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION
☐ STANDARD
☐ COMMERCIAL "B"
☐ DISK DELIVERABLE
☐ STATE FORMS
☒ OTHER (SPECIFY) MCP

COMMENTS/REMARKS

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY: 1.	RELINQUISHED BY: 2.	DATE TIME:	RECEIVED BY: 2.
	11/22 13:50				
RELINQUISHED BY: 3.	DATE TIME:	RECEIVED BY: 3.	RELINQUISHED BY: 4.	DATE TIME:	RECEIVED BY: 4.
RELINQUISHED BY: 5.	DATE TIME:	RECEIVED BY: 5.	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐ TEMPERATURE ____ C

DEC-01-2006 FRI 10:46 AM Woodard & Curran FAX NO. 19785577848 P. 06

4.1 4

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MADEP MCP Analytical Method Report Certification Form

Laboratory Name:	Accutest Laboratories of New England	Project #:	M61007
Project Location:	Creese + Cook Danvers MA	MADEP RTN [1]	None

This form provides certifications for the following data set:
M61007-1 through M61007-53

Test Method:Test Method: CORP ENG 81 M, EPA 160.3, MADEP, SW846 3060A/7196A

Sample Matrices: Groundwater ( ) Soil/Sediment X Drinking Water ( ) Other: ( ) ( )

MCP SW-846 Methods Used					
	8260B ( )	8151A ( )	8330 ( )	6010B (X)	7470A/1A ( )
	8270C ( )	8081A ( )	VPH ( )	6020 ( )	9014M [2] ( )
As specified in MADEP Compendium of Analytical Methods: (Check all that apply)	8082 ( )	8021B ( )	EPH ( )	7000 S [3] ( )	7196A (X)

1-List Release Tracking Number (RTN), if known
2-M SW-846 Method 9014 or MADEP Physiologically Available Cyanide (PAC) Method
3-S SW-846 Methods 7000 Series: List individual method and analyte

An affirmative response to questions A, B, C, and D is required for "Presumptive Certainty status

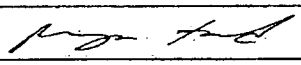
A	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	☑	Yes	☐ No [1]
B	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	☑	Yes	☐ No [1]
C	Does the data included in this report meet all the analytical requirements for "Presumptive Certainty", as described in Section 2.0 (a), (b), (c) and (d) of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☑	Yes	☐ No [1]
D	**VPH and EPH methods only:** Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	☑	Yes	☐ No [1]

A response to questions E and F below is required for "Presumptive Certainty" status

E	Were all QC performance standards and recommendations for the specified methods achieved?	☑ Refer to Narrative	Yes	☐ No [1]
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	☑ Refer to Narrative	Yes	☐ No [1]

[1] ***All Negative responses must be addressed in an attached Environmental Laboratory case narrative.***

I the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature:		Position:	Laboratory Director
Printed Name:	Reza Tand	Date:	12/21/2006